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Thomas Jefferson's Interest in Science and the Useful Arts

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LIKE certain other thinkers of his day, Thomas Jefferson had found a sufficient, progressing moral basis for society in such faculties as the "reason" and the "moral sense" of the individual. Thus progress toward private, national, and even international morality, good will, brotherhood, and happiness were virtually assured. This was especially true in America, said Jefferson, for here the democratic form of government and the reliance upon an agrarian way of life were particularly calculated to maintain an environment in which "reason" and the "moral sense" could function best. America was for Jefferson a "rising nation . . . advancing rapidly to destinies beyond the reach of mortal eye." Nor was this

true of America only. He writes to the Marquis de La Fayette in 1820: "The light which has been shed on the mind of man through the civilized world, has given it a new direction, from which no human power can divert it."

One form of this light which had been shed upon the mind of man was science. Increase in scientific knowledge and the spread of this knowledge throughout the world would enable man to progress toward happiness by increasing his comforts, by teaching him how to adjust himself to the laws of physical force, by regulating his ways according to the harmonious design of nature. Natural science would constantly add to the material conveniences of life. Certain thinkers of the day laid great stress upon the rankest kind of utilitarianism in the field of science. From Bacon through the Royal Society, the Projectors, the inventors, the experimental tinkers, the Philosophes, the Encyclopaedists, the stress was placed upon utility as the end of knowledge. Fruitless speculations or hasty abstractions, having little obvious practical merit, were for many of no great value, if not downright pernicious.

It is partly against this background of scientific interest, liberalism, and utilitarianism that we must view Thomas Jefferson, if we are to understand to a fuller degree the liberation of the mind and spirit of man which constituted the climate of ideas in which he flourished. Scientific rationalism and the search for progress through an increase of applied knowledge had, for many leading thinkers, taken their rightful place before all manner of established taboos, preconceptions, and obscurantisms. Thomas Jefferson's own tremendous natural curiosity about the facts of physical nature, his educational background,[1] his direct and broad acquaintance with the scientists and the scientific knowledge of his day, his somewhat skeptical attitude of mind, his tendency toward empiricism, and his belief that partly through the practical application of the scientific method and the laws of physical force mankind was

[1] While at William and Mary, Jefferson studied under Dr. William Small, friend of Watts and of Erasmus Darwin, a teacher whom Jefferson dscribes as "a man profound in most of the useful branches of science." Jefferson says that Dr. Small "probably fixed the destinies of my life."

to find access to happiness—all contributed to make him lay great stress upon science as one of the roads toward human progress.[2]

It is in the field of science that Jefferson appears to exhibit his greatest kinship with pure rationalism, with those of his day who relied upon the reflective, logical, reasoning faculties and upon sufficient experiment and observation to justify conclusions reached. Though Jefferson might have stated elsewhere that he held certain truths to be "self-evident," in the field of science he generally inveighed against the leap of the mind to broad scientific generalities, having what he considered little basis in fact or arrived at through insufficient data. Though he made full acknowledgment of the place of hypothesis in the progress of science, he was generally more interested in and disposed toward an acceptance of the, to him, more warrantable and useful assertions or activities of empirical science than the hasty axioms of Descartes. "I am myself an empiric in natural philosophy," he declared, "suffering my faith to go no further than my facts. I am pleased, however, to see the efforts of hypothetical speculation, because by the collision of different hypotheses, truth may be elicited and science advanced in the end." He speaks of his "skeptical disposition," and demands "an appeal to experience." In his *Notes on Virginia* he declares: "A patient pursuit of facts, and cautious combination and comparison of them, is the drudgery to which man is subjected by his Maker, if he wishes to attain sure knowledge."[3]

A glance at several examples of his own keen personal curiosity about natural phenomena will illustrate his objectiveness and his patiently statistical and experimental approach toward problems in the field of science. Jefferson was greatly interested in the study of weather and conditions of climate. While away from home he would have his daughters make "regular and accurate observations

[2]The broad inclusiveness of the word science and the rudimentary state of many of the sciences in Jefferson's day must be borne in mind throughout this discussion. Furthermore, in some of the sciences Jefferson was quite well grounded; in others he knew considerably less. But in all of them he had the objectivity and the natural interest and curiosity characteristic of the true scientist, and he exerted every effort to learn as much as a busy public life would permit.

[3]Elsewhere, he remarks that we cannot deny what we cannot account for, but where facts are suggested which have "no analogy with the laws of nature as yet known to us, their verity needs proofs proportioned to their difficulty."

on the climatic conditions at Monticello, and report these in each letter." Wherever he was, he noted weather conditions in a diary which he kept. He made a meteorological table comparing conditions elsewhere with those at Monticello. "This table shows for a five-year period the average annual rainfall, its monthly distribution, the maximum and minimum daily temperature, and the prevailing direction of the wind. Three hundred and forty-five separate observations on wind direction were noted during one month."[4] In the field of ethnology, Jefferson attacks Lafitan's theory of the American Indian and decries his unscientific approach toward the problems involved. Lafitan writes, says Jefferson, with a preconceived notion: "He selects, therefore, all the facts and adopts all the falsehoods which favor his theory, and very gravely retails such absurdities as zeal for a theory could alone swallow. . . . He resided five years among the Northern Indians, as a Missionary, but collects his matter much more from the writings of others, than from his own observations."

Again, Jefferson became much interested in the current problem concerning the growth of shells, or as he expresses it, "a fact stated by Voltaire, in his Questions Encyclopédiques, article Coquilles, relative to the growth of shells unconnected with animal bodies, at the Chateau of Monsieur de la Sauvagiere, near Tours." Hence during his peregrinations into southern France, Jefferson called upon M. Gentil, Premier Secretaire de l'Intendance, to inquire about the matter. M. Gentil vouched for the veracity of Sauvagiere, declared that he believed the matter of the shells, and cited his own observations of masses of shells that had convinced him personally that "shells are a fruit of the earth, spontaneously produced." "What are we to conclude?" asks Jefferson. And his skeptical, logical mind replies: "That we have not materials enough yet, to form any conclusion. The fact stated by Sauvagiere is not against any law of nature, and is therefore possible; but it is so little analogous to her habitual processes, that, if true, it would be extraordinary; that to command our belief, therefore, there should be such a suite of observations, as that their untruth would be more

[4] George Thomas Surface, "Investigations into the Character of Jefferson as a Scientist," *Journal of American History*, IV, 11 (1910), p. 217.

extraordinary than the existence of the fact they affirm. The bark of trees, the skin of fruits and animals, the feathers of birds, receive their growth and nutriment from the internal circulation of a juice through the vessels of the individual they cover. We conclude from analogy, then, that the shells of the testaceous tribe, receive also their growth from a like internal circulation. If it be urged, that this does not exclude the possibility of a like shell being produced by the passage of fluid through the pores of the circumjacent body, whether of earth, stone or water; I answer, that it is not within the usual economy of nature, to use two processes for one species of production. . . . One, therefore, who had rather have no opinion than a false one, will suppose this question one of those beyond the investigation of human sagacity; or wait till further and fuller observations enable him to decide it."

The breadth of Jefferson's scientific interests is one of the most striking characteristics of his mind. True says of Jefferson that he was "interested in all *useful* branches of science, and since his conception of utility was broad, few lines of research that had developed in his day failed to receive some attention from this tireless man." It is doubtful whether even Franklin were in touch with so wide a range of scientific interests.[5] Dr. Surface has shown that Jefferson was "one of the greatest scientific observers in the first days of the American nation."[6] Lucas, in his study of Jefferson's scientific interests, remarks that while "Washington will ever be known as the Father of His Country, . . . Jefferson may well claim to be the Father of Palaeontology."[7] Surface points out that a strong case may be made for the position that Jefferson is the father of American geography.[8] DeKay, the naturalist, refers to Jefferson in his late years as "the Great Patriarch of American Natural History."[9] Jefferson was particularly interested in botany,

[5] R. H. True, "Thomas Jefferson in Relation to Botany," *Scientific Monthly*, III, 345 (October 1916).

[6] Surface, *op. cit.*, p. 214.

[7] Frederick A. Lucas, "Thomas Jefferson—Palaeontologist," *Natural History*, XXVI (May 1926), p. 328.

[8] Surface, *op. cit.*, p. 215.

[9] True, *op. cit.*, p. 360.

and his botanical library "became in time one of the best in America."[10]

It is not here possible to cover the entire field of Jefferson's interests in natural phenomena, in current scientific theories and speculations, and in hundreds of inventions, mechanical appliances, and gadgets. But a glance at a few of them will help to indicate the truly astonishing range of his intellectual curiosity and knowledge.

In the field of astronomy and mathematics we find him interested in the cause for periodical variation of light in certain fixed stars, Herschell's satellites to his planet, the existence of other suns in the universe, and the moon's motion. As for mathematics itself, he says: "It was ever my favorite study." In the fields of medicine, anatomy, and psychology he writes about such matters as the "reformation of medicine," vaccination, comparative anatomy, Flourend's experiments on the functions of the nervous system in vertebrated animals, and "animal magnetism" as explained by the "maniac Mesmer."

Elsewhere he displays an interest in and knowledge of such problems as the existence, growth, and continuance of the species in nature, scientific systems of classification and nomenclature, the bones of the great claw (he is very anxious for the thigh bone in order to fix the stature of the animal before communicating his facts to the American Philosophical Society), the skeleton of an enormous animal from Paraguay, the origin of the earth, and the problem of estimating the heights of mountains. His writings are full of items displaying his interest in machines, inventions, and gadgets, such as the following: a new lamp (with Franklin's part in it), the improvement of household furniture, the improvement of the plough, a geometrical wheelbarrow (in a letter to Paine he puts this before a discussion of the critical French situation of July 10, 1789), Tom Paine's iron bridge, the improvement of time pieces, dry docks, steam engines, and the pedometer. There are hundreds of miscellaneous matters like the location of latitude "by the variation of the magnetic needle," the magnifying powers of lenses of natural crystals, the use of electricity to stimulate plant

[10] *Ibid.*, p. 349.

growth, Lord Kame's proposal for an essence of dung, the smuggling of rice seed out of France (this he does by slipping them into his surtout and coat pockets), the preservation of pilings by saturating them with fish oil, a "hydrostatic waistcoat," and balloon experiments.

Jefferson was always interested in scientific societies and the dissemination of scientific knowledge. Besides honorary memberships in numerous such societies throughout the world, he was for nineteen years president of the American Philosophical Society. We can readily perceive the sincerity behind his statement: "Nature intended me for the tranquil pursuits of science by rendering them my supreme delight." It is little wonder that he should have once remarked that Bacon and Newton were among his "trinity of the three greatest men the world has ever produced."

Jefferson constantly stressed "utility to man" in his discussions about science and technological improvements. Though his interest in certain sciences was partly that of the scientist *per se,* he was more frequently concerned with the application of science to the affairs and needs of men. He was sometimes less the rank utilitarian than certain of his contemporaries, but usefulness to man he always emphasized, whether he were speaking of government, religion, sociology, or science. To achieve the greatest possible progress of the happiness of mankind, Jefferson wished to enlist the *useful* services of almost every aspect of human endeavor.

Of natural history he says, for example: "Nobody can desire more ardently than myself, to concur in whatever may promote useful science, and I view no science with partiality more than natural history." To Jefferson, agriculture was one of the dearest of all pursuits; it fitted beautifully not only into his personal tastes but also into his theories of government, economics, education, and morals, and into his belief in the progress of the happiness of mankind, particularly that portion of mankind so fortunate as to dwell in America. As a useful science, he has the following to say of it: "It is the first in utility, and ought to be the first in respect. . . . It is a science of the very first order. It counts among its handmaids the most respectable sciences, such as Chemistry, Natural Philosophy, Mechanics, Mathematics generally, Natural History,

Botany. In every College or University, a professorship of agriculture, and the class of its students, might be honored as the first." He writes to Mr. Giraud in 1797 concerning the introduction of the bread tree into the South: "One service of this kind rendered to a nation is worth more to them than all the victories of the most splendid pages of their history."

Jefferson was quite displeased with the French naturalist M. Buffon for several reasons. One of these was M. Buffon's contempt for chemistry: "Speaking one day with Monsieur de Buffon, on the present ardor of chemical inquiry, he affected to consider chemistry but as cookery, and to place the toils of the laboratory on a footing with those of the kitchen. I think it, on the contrary, among the most useful of sciences, and big with future discoveries for the utility and safety of the human race."[11] But in Jefferson's opinion the chemists of the day were not assiduous enough in applying themselves to the principles of utility. He cited them Ben Franklin as a model, and pointed out to them the machinery to happiness through chemistry: "You know the just esteem which attached itself to Dr. Franklin's science, because he always endeavored to direct it to something useful in private life. The chemists have not been attentive enough to this. I have wished to see their science applied to domestic objects, to malting, for instance, brewing, making cider, to fermentation and distillation generally, to the making of bread, butter, cheese, soap, the incubation of eggs, etc."

Jefferson naturally looked to man's inventive genius and the employment of the laws of nature in the production of useful mechanical appliances as an avenue to future happiness. He even saw in Robert Fulton's "torpedoes" a blessing to the safety of cities which was as great as the benefits of vaccination, and stated that "Where a new invention is supported by well-known principles, and promises to be useful, it ought to be tried." He declared: "I am not afraid of new inventions or improvements, nor bigoted to the prac-

[11] The remainder of this passage is also of interest in showing Jefferson's recognition of current problems besetting this nascent science: "It is yet indeed a mere embryo. Its principles are contested; experiments seem contradictory; their subjects are so minute as to escape our senses; and their result too fallacious to satisfy the mind. It is probably an age too soon to propose the establishment of a system [of nomenclature, as Lavoisier was then doing]."

tices of our forefathers." To win Jefferson's quick approval, a machine or invention must generally be evidently useful to the mass of mankind. George Fleming had asked Jefferson to give him a critical estimate of the comparative values of his steam engine. In his letter of reply Jefferson stated that he was totally incompetent to give a very valid opinion in his matter, since he had not been able to keep up with the advancements in this field of science. But Jefferson is pleased with the engine because it shows great promise of being widely useful. I see in your machine, says Jefferson, "the valuable properties of simplicity, cheapness and accommodation to the small and numerous calls of life." Should this machine prove feasible in actual operation, "the importance of your construction will be enhanced by the consideration that a smaller agent, applicable to our daily concerns, is infinitely more valuable than the greatest which can be used only for great objects. For these interest the few alone, the former many."[12]

Through the useful application of the discoveries and inventions of science, then, Jefferson sought for the progressive increase of both individual and mass happiness. International good will was, he maintained, definitely promoted by scientific societies. Though certain of his fundamental psychological and moral principles and assumptions caused him to emphasize the importance of the possession of land and an agrarian way of life, particularly in his earlier thinking, his own personal interest in science and his frank recognition of the social benefits of technological improvements forced him to recognize the importance of science in furthering the progress of mankind.[13]

[12]Jefferson wanted useful inventions made available to the public. His bill of 1791 to "Promote the Progress of the Useful Arts" was, he considered, a good compromise between the interests of the inventor and the general public. An inventor should, he said, have a patent; but there should be no monopolies which would prevent the spread of ideas and the useful employment of inventions.

[13]Jefferson occasionally entertained a misgiving that an increasing technological application of scientific knowledge might retard moral progress (as he had planned it) and lead to social degeneracy. In 1811, for example, he expresses a fear that the "reason"—which for some thinkers of the eighteenth century rather easily and intuitively perceives moral truth when not interfered with by a too complex society—may be obscured in its proper functioning by the "hotchets of physical sciences." Again, he looked with some misgiving to the day when technological improvements might produce in America a too great manufacturing and laboring class gathered together in huge cities. Jefferson felt that an agricultural way of life was best, and hence generally distrusted the day when America might become predominantly industrial.

The Measurement of Human Behavior

By MAURICE CURTIS LANGHORNE

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A PSYCHOLOGIST with training received outside America, if asked to select those aspects of psychology which are typically American, would probably designate: the experimental use of the white rat, the application of psychology to business and industry, and the development and use of the psychological test. This oversimplification of the interests of American psychologists is not so wide of the mark as it might seem. The little experimental animal, the white rat, learns amazingly well in the maze and similar learning situations and has been the subject of hundreds of laboratory experiments. The use of measuring devices and techniques developed by psychologists and applied to business and industry has been outstanding. But even though these two aspects of American psychology make long and interesting stories in themselves, they must be passed over hurriedly in order to deal with the last of the three things mentioned by our foreign psychologist, the psychological test. Boring tells us that "the movement in psychological testing is essentially American."[1] More tests have probably been used for more purposes in this country than in any other.

The psychological test has had a long past but a very short recorded history. The recognition of special abilities and the desirability of devising tests to measure them can be traced back to very ancient times. Plato in Book II of his *Republic* recommends that the state should be so organized and conducted that all its members may be educated to perform in the life of the whole the

[1] Edwin G. Boring, *A History of Experimental Psychology* (Chicago: The Century Co., 1929), p. 540.

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functions they are best fitted by natural endowment to exercise. Plato proposes to accomplish such purposes by dividing the people of his state into three classes: rulers, soldiers, artisans. For each of these classes a very elaborate program of education is prescribed. For example, "Persons being considered for the military profession shall be given 'actions to perform' which shall test the retentiveness of their memories, their power of resistance to deceptions, of resistance to timidity and fear, and to the seductions of pleasure."[2] This recommendation of Plato outlines a set of tests for military aptitude.

Quintilian, born about A. D. 35, made the following observation:

> It is generally, and not without reason, regarded as an excellent quality in a master to observe accurately differences of ability in those whom he has undertaken to instruct, and to ascertain in what direction the nature of each particularly inclines him; for there is in talent an incredible variety, and the forms of mind are not less varied than those of bodies.[3]

A delay of 2300 years in applying Plato's recommendation of training capacity for performance, and of nearly 1900 years in noting practically Quintilian's emphasis on variations, was perhaps inevitable. Testing designed to measure such capacity and difference had to await the development of a science of psychology which had for its purpose the prediction and control of human behavior through careful observation and measurement.

Sir Francis Galton, a versatile English scientist, in 1884 founded the Anthropomorphic Laboratory, in which many different types of measurements of physical traits were used. Galton was interested in the measurement of complex abilities, but he himself did not devise any specific tests for them. In this country Cattell seems to have been the first to use the word *test,* and in 1890 he wrote in the British journal *Mind* on mental tests and measure-

[2]Clark L. Hull, *Aptitude Testing* (New York: World Book Co., 1928), p. 6.

[3]George D. Stoddard, *The Meaning of Intelligence* (New York: The Macmillan Co., 1943), p. 79.

ments.[4] These experiments described by Cattell deal mainly with sensory and sensory-motor tests rather than with tests of general intelligence. Cattell was perhaps the first to use tests on college students, and in 1894 began testing students at Columbia.

The first test worthy of the name of intelligence test was that produced by Alfred Binet and his co-worker Simon, who in 1905 published a scale entitled *A Metrical Scale of Intelligence*. This test was revised by the same authors in 1908 and again in 1911. The Binet-Simon tests were introduced into many countries, but America soon came to the fore in the development of important revisions of the test. Terman in 1916 produced—after years of careful revision, standardization, and statistical analysis—the so-called Terman or Stanford Revision of the Binet-Simon tests. This 1916 Terman test was revised again in 1937 by Terman and his co-worker Merrill.

The Binet test and its revisions are tests of individual intelligence; *i.e.,* they can be given to only one subject at a time by a trained test administrator. When it was necessary to test large groups in short intervals of time, the Binet test could not be used. The first group test of intelligence was developed out of the necessities of war. Psychologists in the American Army in 1917, under the guidance of Robert M. Yerkes, president of the American Psychological Association, devised a group test of intelligence which was called the Army Alpha test. During World War I nearly 2,000,000 men were given this test.

The impetus to the testing program following the war was marked. The majority of tests, in fact, have originated since 1920. A bibliography of tests and measuring scales published in 1932 lists hundreds and hundreds of tests which were published between 1920-1932. This bibliography presents a convenient system of test classification:[5] 1. Intelligence and mental processes; 2. Educational and scholastic aptitude and achievement; 3. Personality tests and rating scales; 4. Vocational aptitude, skills and achievement.

[4] George D. Stoddard, *The Meaning of Intelligence*, p. 80.

[5] Gertrude H. Hildreth, *A Bibliography of Mental Tests and Rating Scales* (New York: The Psychological Corporation, 1933), p. 14.

Bibliographies since have added to the lists other hundreds of new tests and revisions.

World War II added an incredible number of tests and test uses to the long list of those described. The Army, Navy, and their Air Forces have made much use of psychologists in devising and administering tests for all kinds of wartime services. A recent book has aptly stated the need of a testing program in the armed forces as follows:

> The abilities and skills of men to perform successfully hundreds of different kinds of jobs constitute the psychological material of the armed forces. The Army, Navy, Marines need thousands of trucks, but a truck is of no use without a man with the ability to drive it, nor is it long of any use without a man with the ability to service or repair it. The Army and Navy need planes, but a plane must be equipped with a pilot or crew if it is to operate, and the plane and its pilot or crew need a ground crew to service it. The armed forces need beef, but much of a carcass of beef is wasted without a competent butcher. They need men to weld castings, repair watches and develop photographs. All sorts of abilities and skills are necessary, hundreds of skills in hundreds of thousands of men. How are they found?[6]

The answer to that question reveals the tremendous role of tests and testing procedures in contemporary times. "The honor of being the most widely administered test belongs to the Army General Classification Test (AGCT), whose upwards of nine million administrations leaves it no challenger to the title."[7] This is a test of "general learning ability" developed by Army personnel technicians. It was completed before the first draftees arrived at reception centers and has been given to every literate inductee since. The following table, based on more than eight million cases tested in reception centers throughout the country prior to January

[6] Edwin G. Boring, ed., *Psychology for the Armed Forces* (Washington: The Infantry Journal, 1945), p. 225.

[7] Staff, Psychological Section, Office of the Surgeon, Headquarters, Army Air Forces Training Command, Fort Worth, Texas, "Psychological Activities in the Training Command, Army Air Forces," *Psychological Bulletin*, 42 (1945), pp. 37-54.

1945, gives a good picture of the testing of a large segment of the American male population.[8]

TABLE I

GRADE DISTRIBUTION OF MEN PROCESSED THROUGH RECEPTION CENTERS 1940-1944

Army Grade	*Standard Score Limits*	*Percentage of Total Group*
I (very rapid learners)	130 and above	6.0
II (rapid learners)	110-129	26.5
III (average learners)	90-109	30.5
IV (slow learners	60-89	27.7
V (very slow learners)	59 and below	9.3

Total number of cases 8,293,879

The Army General Classification Test has proved useful in predicting how easily each inductee can learn his duties, and it has been helpful in selecting candidates for training in many of the military occupational specialties.[9] It has been possible to predict the future success of men in various schools of the Army by means of the scores on the AGCT. For example, the chances are 92 out of a hundred that a man scoring 140 or above will receive a commission in Officer Candidate School, whereas the chances are 48 out of 100 if his score is under 110. A score of 110 points is a minimum score for entrance into Officer Candidate School. Men ranked in Group I in Table I have 82 chances out of 100 of successfully completing schooling as tank mechanics, while the chances are 30 out of 100 if the man is in Group III.

The General Classification Test is supplemented by special tests for the selection of candidates for some of the highly specialized jobs. The use of tests in the Air Corps has been very successful. The Psychological Section, Medical Division, Army Air Forces Training Command, was established April 21, 1942, and was assigned primary responsibility for the "application and correla-

[8] Staff, Personnel Research Section, Classification and Replacement Branch, The Adjutant General's Office, "The Army General Classification Test," *Psychological Bulletin*, 42 (1945), pp. 760-68.

[9] E. G. Boring, *Psychology for the Armed Forces*, p. 232.

tion of the various tests used in the classification of aircrew members."[10] The psychologists and their assistants in this section have devised a set of tests making up the "Classification Test Battery." This battery of tests has been administered to approximately 338,000 men in the course of a single year. The battery employed consists of eighteen tests, of which twelve are of the paper-and-pencil variety and six are apparatus tests.

Some of the results from the use of this battery of tests follow: Less than 5% of the group receiving the highest pilot aptitude score were eliminated from elementary training, while 80% of those receiving the lowest scores were eliminated. About 8% of those making highest scores on bombardier tests were eliminated in training school, while 50% of those in the lowest groups were eliminated. Comparable figures apply to the selection of navigators. About 5% of those classified in the highest groups were eliminated, whereas 55% of the lowest groups were eliminated. The saving in life, time, money, and equipment was therefore enormous. Similar tests were devised and used by the Navy with equally good results.

The term *psychological test* has largely superseded the older term *mental test,* since the test is a measuring instrument much broader in scope than the term *mental test* implies. A psychological test represents a carefully planned situation which is designed to measure some aspect of human behavior. Such measurement is usually in terms of one or more of four variables: time, number, difficulty, quality. A psychological test is the result of much careful thinking, hard work, and the expenditure of large sums.

There are four important characteristics which a test must embody to be considered trustworthy. First, it must be standardized. This quality is achieved by giving the carefully selected items of the test to a large number of people of known age or ability to determine exactly what they can do with them. Later, if people of unknown age or ability are tested, a standard has been established which can be used for comparison. In the second place, a good test must possess reliability; *i.e.,* it must be self-consistent,

[10] "Psychological Activities in the Training Command, Army Air Forces," *Psychological Bulletin,* 42, p. 38.

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There are four important characteristics which a test must embody to be considered trustworthy. First, it must be standardized. This quality is achieved by giving the carefully selected items of the test to a large number of people of known age or ability to determine exactly what they can do with them. Later, if people of unknown age or ability are tested, a standard has been established which can be used for comparison. In the second place, a good test must possess reliability; *i.e.,* it must be self-consistent,

[10] "Psychological Activities in the Training Command, Army Air Forces," *Psychological Bulletin,* 42, p. 38.

so that each time it is given to the same people under the same conditions, the same results can be predicted. Third, a good test must have validity. This means that the test results must conform to other known criteria, or that the test accomplishes what it purposes to do; for example, a valid test of automobile driving would be one on which people with already established records as drivers would make scores on the test which would agree with their records. Finally, the test items must possess objectivity of meaning, so that, regardless of who takes the test, each item will be interpreted uniformly.

Tests have been used for many purposes, such as: placing children in the school grade for which they are best fitted; the placement of superior or inferior children in special classes; the selection of employees for special training or for special rewards; choosing professional school candidates; the selection of men for executive training, *etc.* In addition to psychological tests and the uses of them just described, other tests have been developed for such purposes as: the measurement of attitudes and opinions; checking on personality development, and in certain abnormal cases of personality deterioration; gauging special aptitudes, such as artistic and musical; studying the requirements established by job analyses for mechanical, clerical, and other occupations.

The test is not to be considered a panacea for all the ailments associated with personnel and personality problems. In the hands of an untrained administrator it is a worthless instrument. Tests can not be used to pigeonhole people, for they have shown that people differ in the degree to which they possess traits, and not in the kinds of traits which they do possess, so that hard and fast classifications or typings are impossible. They do indicate comparative rank and quantitative differences achieved by individuals on special tasks, and this information may be important in vocational guidance, and personnel placement and problems of various sorts. The test should be used as only one of a number of checks in obtaining as complete a picture as possible of the individual. It seems safe to say, in conclusion, that a good test, carefully administered and interpreted, is the best technique yet devised for studying and measuring the ways in which people differ in their behavior.

The Gypsy in English Literature

By JOHN E. TILFORD, JR.

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I

EARLY IN the fifteenth century, more than a generation before the birth of Columbus, there began spreading over Western Europe a strange nomadic people: dark-skinned but light-fingered, sharp-eyed and wild. They wore brightly colored clothing embellished with golden coins; they traveled in small tribes, transporting their effects on horses or in carts; they made their living by tinkering, horse-trading, music-making, dancing, fortune telling, trickery —and pilfering. And they spoke a tongue understood by no one but themselves, though they soon learned the languages of the countries in which they wandered. They were the Gypsies.

Who they were, whence they came, no one knew. They claimed to be of "Lower Egypt," wandering for penance. Most people accepted them as Egyptians (hence "Gypsies"); but some thought they were one of the lost tribes of Israel, and others that they were remnants of the Tartar hordes. For over five centuries they have wandered about continental Europe and England—and, for the past century, about North and South America—looked upon with mingled dread and fascination. With a few exceptions—notably in Hungary, Roumania, and Spain—they have never settled in one place for long; they have never been organized into a social or political force; they have always been wanderers and pariahs. They have been driven, banished, persecuted, and proscribed up and down Europe for hundreds of years. In 1492 they were banished from Spain; a century later Elizabeth of England tried to get rid of them, and scores were hanged; in 1726 Charles VI of Austria ordered all male Gypsies to be put to death.[1] Since about 1800 most coun-

[1]Martin Block, *Gypsies: Their Life and Customs* (New York and London, 1939), Chap. V, *passim*. See also George Borrow, *The Zincali* (London, 1841), and Konrad Bercovici, *The Story of the Gypsies* (New York, 1931).

tries have abandoned such harsh treatment, though in 1942 Hitler said that even if the Gypsies "are not Jews, they will hereafter be treated as Jews," and they were driven into concentration camps.

On the whole the Gypsies have not changed much since they appeared in Western Europe in 1417. Most of them are still nomadic; most are still illiterate; and they still speak their own language among themselves. Moreover, they yet maintain and enforce their own tribal laws and traditions, quite different from (and usually antipathetic to) laws of the lands they traverse. They still view *gorgios* (non-Gypsies) as proper and legitimate prey for their predatory wiles. And *gorgios* still look upon them with fear and wonder—an attitude the Gypsies by no means discourage—and still fall for their tricks.

To this day, most people know little of the Gypsies—or, as they call themselves, the *Romanies* (from the Gypsy word *rom,* "man" or "husband")—and have no idea of their origin, still holding to the old legends. Indeed, it has been known for not much more than a century that, as analysis of their language indicates, they originally came from India—how long ago no one yet knows.

Considering these things, and the relative smallness of their numbers—one estimate of 1900 was that there were only about a million scattered over Europe, of which some 20,000 were in England—their influence upon Western culture is remarkable.

This influence is mainly "romantic" and is most evident in music and literature. One cannot listen long to the radio, for instance, without being aware of this influence in popular and serious music. Numerous light operas deal with Romany life, including Herbert's *Fortune Teller,* Strauss's *Zigeunerbaron* (Germans call Gypsies *die Zigeuner*), and Balfe's *Bohemian Girl* (the French call them *les Bohémiens*). And some of the best-known serious operas contain Gypsies, notably Bizet's *Carmen,* Thomas' *Mignon,* and Verdi's *Il Trovatore.* Hardly a modern composer has not been influenced by Romany music, and many have gone directly to it for inspiration: Liszt (who wrote a book about Gypsy music) in his Hungarian Rhapsodies, and Brahms in his Hungarian Dances, as well as Rimsky-Korsakoff (in *Capriccio Espagnol*) and Sarasate (in

Zigeunerweisen). Everyone has heard the currently popular "Hora Staccato," which Jascha Heifetz transcribed from the playing of a Hungarian Gypsy violinist. Even though some of this music is often less true "Gypsy" than native folk music as played and interpreted by Gypsies, the Gypsies have nonetheless perpetuated it and endowed it with the unmistakable and peculiar genius of their race.

In literature, too, they have been important, both as characters and as romantic background, from the days of Cervantes to the present; everyone, of course, knows of Esmeralda in Hugo's *Hunchback of Notre Dame* and of the heroine of Mérimée's *Carmen,* whence came Bizet's opera. But it is with Gypsies in English literature that I am concerned here, and in the following pages I should like to trace briefly their history in English books, to point out how literary treatment of them has changed, and to mention some of the principal English writers who have been drawn to them.

II

No one knows exactly when the Gypsies first came to England, but they seem to have been well established there early in the sixteenth century. One of the first references to the "Egyptians" in English books is in Andrew Boorde's *Fyrst Boke of the Introduction of Knowledge* (published seventeen years before Shakespeare's birth), which also has the first recorded specimen of Romany, the Gypsy tongue. Boorde warns that the "Egipcions be lyght fyngerd, and vse pyking"; and, for the next two centuries, writers portray them almost solely as rogues, along with all the other "coney-catchers" (dupers of the gullible—beggars, thieves, cut-purses) haunting the roads of England and the alleys of London. We find them in this guise in numerous picaresque writings from Thomas Harman's *Caveat or Warening for Common Cursetors* (1566) to Richard Head's *The English Rogue,* first issued in 1665.

There are few Gypsies in Elizabethan dramas. Shakespeare has none in his plays, though he mentions them half a dozen times. John Middleton, in *More Dissemblers Besides Women* (before 1622), employs them rather amusingly in one long scene (IV, i). But Ben Jonson thought them fit to set before a king: his *Gypsies Metamor-*

phosed, a masque, was played before James I in 1621. Here the Gypsies' fortune-telling is used as a vehicle for gossip about the court, the parts being taken by the lords and ladies themselves.

In the eighteenth century the Gypsies continue turning up in their character of vagabond villains. Sir Roger de Coverly, in *Spectator* No. 130, meets up with a tribe of the "lawless vagrants" and has his fortune told. In Defoe's *Moll Flanders* (1722) the protagonist as a young girl "wanders among a crew of those people they call Gipsies, or Egyptians." In Fielding's *Tom Jones* (1749) we find them again, in a brief scene (Book XII, Chap. xii), in which Jones and Partridge fall in with "a company of Egyptians, or, as they are vulgarly called, Gypsies." Later in the century, too, they occasionally show up on the stage. But the most famous of the works at this period containing Gypsies is the *Life and Adventures of Bampfylde-Moore Carew,* of which the first edition appeared in 1745. The third, expanded edition, a few years later, contains Carew's adventures with Gypsies—he claims to have been elected their king—and he includes "Gypsy laws" and a dictionary of "Gypsy language."

Such works, however, presented Gypsies who bore little resemblance to the true Romanies. They emphasized only the villainous part of the Gypsy character; except for Carew, they told little of the Gypsies' strange wildness and reticence or of the fact that they were a society within a society, possessing their own laws and morality and their own language, of which only a few words were known to the English. The Gypsies themselves were careful not to reveal their tongue, and the so-called "Gypsy language" in Carew and other writers was nothing more than thieves' cant, drawn largely from Harman's *Caveat* and later coney-catching pamphlets. In short, the Gypsies were invested with little either of their true qualities or of the "romantic" ones familiar to us today; they were stock figures; they appeared not as heroes or heroines, or even in leading roles, but as mere props and backgrounds.

III

In nineteenth-century literature Gypsies really came into their own, both romantically and realistically. They had become estab

lished as a literary convention, and literary conventions hang on. Moreover, the Romantic Revival aroused interest in natural, wild folk, unsullied by "civilization"; the Gypsies were not only untrammeled by the rigors of civilization, but were as free as anybody could be in England or Europe. And though interest in rogue literature survived—witness continued editions of such works as *The Newgate Calendar*—tastes were turning to the romantic and the melodramatic and the mysterious, as in the Gothic novel of the late eighteenth century. The Gypsies, with their strange ways, fortune-telling, incomprehensible language, and bizarre appearance, were a natural ingredient for romantic literature. More important, something had been learned about them by this time, especially about their origins. In 1783 Heinrich Grellmann, in his *Die Zigeuner,* had noted, by linguistic analysis, their Indian origin; and in 1844 August Friedrich Pott published the first scientific study of the Gypsies, *Die Zigeuner in Europa und Asien.* It was being discovered that the *facts* about the Gypsies were more amazing than the dubious legends.

The first nineteenth-century novelist to give the Gypsies something to do in his books besides be roguish was Scott. Lutin, in *The Fortunes of Nigel* (1822), is a fairly conventional rogue; but Hayraddin of *Quentin Durward* (1823), an important character, though roguish and double-dealing enough, yet has a hint of the strange audacity and inscrutability of the true Gypsy. Scott's most famous Gypsy, of course, is Meg Merrilies of *Guy Mannering* (1815), who not only plays a very important part in the story itself, but possesses some of the exotic, mysterious, and terrifying qualities later to be associated with Gypsy characters; she even possesses a kind of wild nobility. But Scott's Gypsies do not bear much resemblance to the more authentic Romanies of later writers. Meg's language, for instance, has no Romany in it, but is merely Scots dialect interlarded with thieves' cant.

Where Scott left off, William Harrison Ainsworth and G. P. R. James carried on, though by no means with distinction. The Gypsies in Ainsworth's *Rookwood* (1834), though important in the story, are merely conventional figures dressed up in outlandish costumes,

complete with love philtres, spells, underground chambers, and ghosts, and looking as if they had just stepped out of a third-rate operetta. Pharold, the leading Gypsy character of James's *The Gipsy* (1835), sounds like a fugitive from a school of elocution, and in his absurd "nobility" and romantic loyalty is about as far removed from Romany character as any Gypsy in fiction. In other novels of this period, such as Bulwer Lytton's *The Disowned* (1838) and Captain Marryat's *Japhet in Search of a Father* (1836), the authors used Gypsies merely to perform conventional duties, to the accompaniment of little rhapsodies about the charms of the wandering life and the joys of living close to nature. And as the century progressed, we find Gypsies appearing in minor roles in such familiar novels as George Eliot's *Mill on the Floss* (1860), Charles Reade's *Cloister and the Hearth* (1861), and George Meredith's *Harry Richmond* (1870).

Nineteenth-century poets occasionally wrote of Gypsies, usually investing them with idealized *gorgio* qualities, not necessarily characteristic of the Gypsy; familiar instances are Longfellow's *Spanish Student* (1843), George Eliot's *Spanish Gypsy* (1868), and Emerson's "Romany Girl" (1857). Matthew Arnold's famous "Scholar Gypsy" (1853), of course, has very little to do with Romanies. And as in the previous century, Gypsies now and then appeared in ephemeral plays.

By the time Victoria was getting used to being Queen, and the Gypsy's secrets were beginning to transpire, Englishmen, interested in the folk of the road since the days of Boorde and Harman, began looking more intently at these strange, dark, wandering people who had been among them for over three centuries. And England began to breed a race of Romany Ryes.

Now a Romany Rye is a "Gypsy Gentleman," a *gorgio* who has, by one means or another, ingratiated himself with the Gypsies, learned Romany, and spent as much of his time as possible consorting with them, studying their ways, their lore, their language, and their peculiar character.

The first of the English Romany Ryes, and the greatest, was George Borrow (1803-1881). An ardent student of languages (at

eighteen he could speak twelve), Borrow early became friendly with a tribe of Gypsies, the Smiths (or, in Romany, the Petulengros), and learned their language. From 1833 to 1839, as an agent of the British and Foreign Bible Society, he had opportunity to study the Gypsies in Russia and especially in Spain, where he spent four amazing years distributing Bibles. In 1841 he published his *Zincali, or the Gypsies in Spain,* the first extensive study in English of Gypsies, and probably the first in the world made from long personal and intimate acquaintance with them. In 1843 he put forth *The Bible in Spain,* recounting his experiences in that unhappy country, many of which had to do with Spanish Gypsies. Then came *Lavengro* (1851) and its sequel *The Romany Rye* (1857), which together comprise a long autobiographical novel drawn from his early life and recount the adventures of his hero Lavengro (or "Word-Master") many of them with the Petulengros. *Wild Wales* (1862) has only one episode concerning the Gypsies, but his last work, the *Romano Lavo-Lil* ("Gypsy Word Book"), in 1871, gives a long vocabulary of Gypsy words and a number of short accounts of some of his dealings with the dark people.

Borrow's contribution was not only a series of delightful books which have come to occupy a respectable place in English literature, but an accurate picture of Gypsy character, both as described and analyzed in his more or less factual works, *Zincali* and *The Bible in Spain,* and as revealed through the Gypsy characters in his novel. In Antonio, the proscribed Spanish Gypsy, Jasper Petulengro, the horse-trader and prizefighter, and Ursula, the wily Romany *chi,* Borrow has managed to convey something of the real nature of the Gypsy, actually far more "romantic," exotic, and singular than that of even the most grotesque fictions—his oblique morality, his scorn for *gorgio* values, his earthy wisdom, his quick and scheming mind, his humorous roguishness, his loyalty to his blood companions, and, above all, his incorrigible Gypsiness. Later studies of Gypsies corroborate the essential veracity of Borrow's portraits, and in many a later Romany Rye's notebook transcription of Gypsy utterance one can see the truth of the spirit with which Borrow portrays his Romanies. And despite the fact that many later writers,

both in fiction and essay, have given perhaps a more literal and detailed analysis of the Gypsy's language, beliefs, and way of life, none have invested him with the elusive ineffable charm that Borrow did; for Borrow is able to view him at once realistically and romantically.

Borrow's writings aroused considerable interest in Gypsies, and soon there were many Romany Ryes, scholars, anthropologists, linguists, and novelists, to whom the wild, free, anti-conventional life of the Gypsies could not help appealing. It was as if their way of living were one of the few manifest protests against the crowded and harassed life of the machine age. And hardly a Romany Rye after Borrow but paid homage to him and acknowledged him as master.

Among these Ryes, the best known are Charles Godfrey Leland, Francis Hindes Groome, and Theodore Watts-Dunton. Leland, a native American, spent much of his time studying Gypsies in America, in England, and on the continent; and his *English Gypsies and Their Language* (1873), *The Gypsies* (1882), and *Gypsy Sorcery and Fortune Telling* (1891) are a combination of personal reminiscence and accurate scholarly observation. Groome likewise set down his findings in such works as *In Gypsy Tents* (1880) and *Gypsy Folk Tales* (1889). In his novel *Kriegspiel, the War Game* (1896), Groome has a highly melodramatic plot involving kidnaping, murder, and other banal situations; but his Gypsies are valid. It is curious that whereas Borrow did not attempt to transcribe his Gypsies' English literally, but only suggested its quality by occasional lapses into uneducated vernacular and use of Romany phrases, the later writers took pains to reproduce it as phonetically as possible. Yet if not phonetically true to fact, Borrow was poetically true—in the end a higher kind of truth.

Borrow has been called the "most romantic of the realists" (it could as easily be said that he was the most realistic of the romantics). But it remained for his friend and disciple Watts-Dunton, in his novel *Aylwin* (1896), to write as romantically of the Gypsies as seems possible without abandoning verisimilitude. Watts-Dunton's Gypsy characters, though true to fact as far as they go, are

somewhat idealized and lack the fascinating "moral obliquity" and squint-eyed roguishness that severs them irrevocably from *gorgios*.

There were many other treatments of the Gypsies during the latter half of the century. Scores of studies of the Gypsies in England, in Scandinavia, and in continental Europe were produced, not only by Englishmen, but by German, French, and Spanish scholars. In 1888, largely through the efforts of Leland, the Romany Ryes of England formed the Gypsy Lore Society, and in its *Journal,* which (except for two interruptions) has persisted to the present day, the followers of the *patteran*[2] have set down all the Gypsy lore they have discovered—new words, folk tales, yarns, recipes, anything and everything pertaining to the "business of Egypt," as Borrow called it. When Borrow published his first book on Gypsies, he knew more about them than any other *gorgio* in England—or anywhere else, for that matter. By the century's end, the accumulated knowledge of the dark people filled scores of books and countless articles.

IV

Interest in the Gypsies, and in books dealing with them, has not lagged in the twentieth century. Borrow's works, for example, have been reprinted many times in the past fifty years (there have been some thirty editions of *Lavengro* alone since 1900). Anthropological, linguistic, and musical studies of Gypsies in every part of the globe pour forth steadily. Gypsies continue to appear in novels and stories as major and minor characters. And the Romany Ryes have not lost their urge to roam the highways to seek out and mingle with the sly tawny people.

Representative of modern novelists treating Gypsies is the late Lady Elinor Smith, who claimed Romany blood and who appeared to know something of the Gypsies. Yet her novels dealing with Gypsies, including *Red Wagon* (1930), *Flamenco* (1931), and *Spanish House* (1938), are of the slenderest literary value and are obviously aimed at the drugstore lending-library trade. Though her fictional Gypsies do no great violence to basic Romany character,

[2]Secret Gypsy road sign, made of leaves, twigs, stones, or rags.

they are often so twisted to highly romantic and sensational ends that they bear about as much resemblance to the average Gypsy as a technicolor cinema does to life. Her last published novel, *Caravan* (1943), is a thinly disguised life of Borrow, on which she superimposed a tawdry love story (recalling *Wuthering Heights*) as well as all manner of banal romantic and erotic trappings.[8]

Among fiction worthier of note, both as literature and as pictures of Romany life, are stories of Konrad Bercovici, including *Ghitza, and Other Romances of Gypsy Blood* (1921) and *Singing Winds: Stories of Gypsy Life* (1926) (Bercovici is something of a Romany Rye himself and records some of his adventures in his often extravagant *Story of the Gypsies,* 1928); D. H. Lawrence's novelette *The Virgin and the Gypsy* (1930); and Idwal Jones' charming story for children, *Whistler's Van* (1936). I should not neglect to mention that there have been many collections of Gypsy folk and fairy tales, a good example being Cora Morris's anthology, *The Gypsy Story Teller* (1931), which draws its stories from Gypsy scholars all over Great Britain and continental Europe.

It is the Romany Ryes, however, who have written the best books about Gypsies in our time. Of the Ryes perhaps the most representative and undoubtedly the most charming is Walter Starkie, Professor of Spanish in the University of Dublin, who periodically dons his old clothes, takes up his fiddle case, and sets out to wander among the dark people. He tells of his adventures in Hungary and the Balkans in *Raggle-Taggle* (1933), and in Spain in *Spanish Raggle-Taggle* (1935) and *Don Gypsy* (1937). There are others worthy of mention. An American professor, Irving Brown, who is, as Starkie says, "one of the true Romany Ryes," has likewise written of his studies, with particular attention to Gypsy music, in *Nights and Days on the Gypsy Trail* (1922), *Gypsy Fires in America* (1924), and *Deep Song* (1929). And two English Romany Ryes published their studies of the Gypsies, *Romany Life* (1915), under

[8] At least two other modern novels have drawn their principal characters and major and minor episodes from *Lavengro* and *The Romany Rye—The Broad Highway* (1911), by Jeffrey Farnol, and *In Search of Arcady* (1912), by Nina Wilcox Putnam. Mrs. Putnam's novel is a slight little woman's-magazine romance; Farnol's is written in his typically amusing, swashbuckling fashion and is not without limited literary value.

the *nom de plume* "Frank Cutriss," giving special attention to the ways of the modern English Gypsy.[4]

It may seem odd that I have mentioned no Gypsy writers. The fact is that Gypsies are traditionally illiterate.[5]

One of the few violators of this tradition, if not the only one, is Gypsy Petulengro, who claims that he "must have been the first—and last—Romany ever to learn to read and write." This Petulengro, the grandson of the same Jasper who appears in Borrow's books, has written his own delightful autobiography in *A Romany Life* (1936). For all who want to learn of Gypsy character, ways, and legend first-hand, here is the book—but the reader should not forget that no true Gypsy would ever disavow one profound tradition of the Romany: to deceive the *gorgio* at every opportunity. But even if one suspects Petulengro of telling a tall tale now and then, he cannot fail to be intrigued by the Gypsy lore in his book, coming from one who knows.

The wide investigations and studies of the Gypsies, and the vast accumulated knowledge of their language, customs, folk-lore, and character during the past hundred years, have in some ways changed our attitudes toward them; but they seem to remain much the same strange, sly, mysterious folk they were half a millennium ago. In some spots they have more or less settled down; some have become famous as musicians and dancers; but most are still the wandering people, moving about England and on the continent in their brightly colored caravans. Always ready to adapt themselves to the country in which they take up residence, they have in America substituted automobiles and trailers for caravans, but otherwise they are like their European brethren. (The shortage of gasoline and tires during the war forced them to be unhappily cooped up in cities.) They

[4]Among the continental Romany Ryes whose work is available in translation is the German Martin Block, whose *Gypsies: Their Life and Their Customs* (1939) lacks the charm and literary interest of the writers mentioned above but is highly informative.

[5]One reason is suggested in a dialogue between Lavengro and Jasper Petulengro (*The Romany Rye*, Chap. IX):

"You should learn to read, Jasper."

"We have no time, brother."

"Are you not frequently idle?"

"Never, brother; when we are not engaged in our traffic, we are engaged in taking our relaxation: so we have no time to learn."

still pursue most of their old crafts—tinkering, basket-weaving, carving, filching, making music (the men, that is); while the women still dance and sing and tell fortunes for the gullible. And the men, still averse to steady labor—or work of any kind, for that matter—continue to depend on their womenfolk to bring in money and supplies.

In the western world the Gypsies have been a scattered and itinerant nation within nations for over five centuries—and there is no reason to doubt that they will maintain their peculiar identity, and be set down in books, for a long time to come.

A Note on the Frontispiece

In the Minutes of the Atlanta Medical College for June 15, 1857, there is the following entry: "Resolved That the Faculty of the Atlanta Medical College have executed by some Competent Artist a handsome portrait of the Dean, Prof. J G Westmoreland and that it be placed in the Lecture room which he occupies in the College Building, to be considered as a testimony of our high appreciation of his services as Dean, and as the active and indefatigable member of Building Committee." The portrait of Dr. John G. Westmoreland, Professor of Materia Medica and Therapeutics and Dean from the founding of the Atlanta Medical College in 1854 for twenty years thereafter, now hangs in the Library of the School of Medicine in the Emory University Hospital. The name of the "Competent Artist" has not been preserved, but the highest praise that can be given the painting is that it appears to have been a fair likeness, with some exaggeration of the features of its subject. The colors are muddy; the canvas has been somewhat damaged, and there has been some unskillful retouching. Since, however, this is the earliest picture in the medical gallery of the University, it has considerable historical interest.

Immunization of Birds to Malaria by Vaccination[1]

By W. B. REDMOND

W. B. Redmond, A.B. '27, M.S. '28, Ph.D. (Chicago) '37, is Associate Professor of Biology. Since 1936 Professor Redmond has been engaged in studies concerned with immunity against malaria. During 1946 he is working on a grant from the U. S. Public Health Service, his efforts being devoted to the culture of the malaria organism.

IF it were necessary for man by outward means to protect his body from all disease germs, he would wage a losing battle. In fact, there are very few drugs that are specific cures of diseases. The most effective defense of the body against the constant attacks of disease germs is the resistance of the tissues of the body itself to the invading organisms. Two aspects of this type of defense are generally recognized. One is the so-called "natural resistance" of the body; the other is the immunity acquired as a result of a specific disease. The first is general, and its effectiveness may be reduced by a general weakening of the body by any disease. Immunity, on the other hand, is in most cases quite specific, and is less likely to be affected by general body conditions. There are degrees of immunity, however, and non-specific conditions may exert some control over infection.

Following recovery from such diseases as smallpox, measles, mumps, typhoid, and others, it is common knowledge that a person will not be likely to contract the disease a second time. The germs causing the disease have also caused the body to set up defenses against these specific germs, so that when they enter the body subsequently they are destroyed. This is the mechanism of immunity, and the reason why one disease does not produce immunity to another. The resulting immunity is not necessarily in direct ratio to the severity of the disease. Frequently people who are unaware

[1]The author wishes to thank the Penrose Fund of the American Philosophical Society and the Permanent Science Fund of the American Academy of Arts and Sciences for financial aid which made this research possible.

that they have had an infection of diphtheria, for example, become immune to the disease.

The protection afforded by immunity as the result of having a disease may be produced in a number of other ways, one of which is by the inoculation of a vaccine. A vaccine is a killed or attenuated culture of the germs, or bacteria. These bacteria are not able to increase in number and cannot produce the disease. In typhoid vaccination a large number of the bacteria which cause typhoid have been killed by heat and are injected into the tissues of the body. These bacteria are disseminated by the blood stream and reach the parts commonly attacked, but are unable to weaken the tissues sufficiently to produce a disease condition. Their presence stimulates the tissues of the body to set up the defenses against them in the same manner as if they were alive and increasing in number. The injected bacteria are soon destroyed, but the means of their destruction remains to protect the body from living typhoid bacteria which might be able to gain entrance at a later date.

Human malaria was thought at one time not to produce immunity. The advent of malaria therapy for certain types of paresis has provided a means whereby human malaria may be studied under experimental conditions, the outcome of which has been the accumulation of much valuable information. One of the facts ascertained was that malaria does produce immunity in man. However, the extent of the knowledge of immunity to human malaria is still meager because of the limitations of the experiments. First of all, the condition of the patient must be considered. This primary consideration often makes it impossible to continue a test, as it may be necessary to terminate the malaria by drug treatment before the experiment is complete.

In order to supplement experiments on human malaria, other animals that are susceptible to malaria are often used. In studies on immunity to malaria, birds have been employed to great advantage, because one attack will render the bird immune to the species of organism producing the original attack.

In the human this is not always the case, though some degree of immunity is produced in man following an attack of untreated

malaria. In birds the parasites increase in number over a period of four to seven days or longer. Following the period of increase, a peak in numbers is reached which is followed by the disappearance of large numbers of the parasites. The number decreases rapidly, and after about a week no parasites can be found by ordinary microscopic examination of the blood. However, the presence of a few parasites can be demonstrated by subinoculating a small amount of the blood of the recovered bird into a non-infected bird. The latter will soon develop an infection. This condition following recovery is known as the latent condition. As long as the latent condition persists, the bird is immune to this specific type of malaria.

The malaria parasites infect the red blood cells. Periodically each parasite divides into a number of young parasites, each of which infects a new red blood cell. However, in organs such as the spleen and liver there are other types of cells that engulf and destroy the parasites. At first there are not enough of these cells to prevent the rapid increase of the parasites, but soon their number is increased enormously, and they appear to have been stimulated to greater individual activity. Shortly after the infection has reached its peak and the parasites begin to decrease in number, these cells may be found to be filled with dead parasites and parasitic debris. Their activity seems to continue to increase as long as the infection is active. The cellular activity subsides during the latent period, but a new infection brings forth a renewed destruction of the parasites before they increase sufficiently in number to show up in the blood. Even when inoculated in large numbers, the injected parasites are removed rapidly. This usually occurs within forty-eight hours. The immunity cannot be transferred by taking the serum from the immune bird and injecting it into a non-immune bird. A passive transfer such as this is possible in only a few diseases of which diphtheria is one of the most notable examples. No drug is known to aid in the development of immunity to malaria. In fact, the treatment of human malaria with drugs generally interferes with the development of the resulting immunity.

Various methods have been used unsuccessfully to attenuate the malaria organism. In France the Sargent brothers have attempted

to produce a subpatent or light infection by weakening the sporozoite stages which are transmitted by the mosquitoes. A number of methods used in the United States to attenuate pathogenic bacteria have been employed on the blood cell stages of malaria. Results from these have been uniformly negative, or if any attenuating effect were noted, it persisted for one or two infections only. Subsequent infections were as virulent as infections produced by untreated parasites. Numerous attempts to produce immunity with killed parasites also have met with little success.

Malaria parasites are readily killed, but most of the methods previously used for the production of a vaccine have destroyed the red blood cells as well. Injection of this mixture of killed parasites and hemolysed blood will not produce immunity. The parasites can be removed from the blood cells by treatment with a solution of saponin and then washed free of the cellular debris, but they will not produce immunity when used as a vaccine.

Examinations of the cells of the spleen and liver have indicated that the parasites have entered the red blood cells before they are removed by the spleen and liver cells. Only a very few appear to have been destroyed during the time that the parasites were outside the blood cells. If this is true, it is not likely that parasites which are outside of blood cells—that is, parasites which have been removed from blood cells—will have as much stimulating effect as the parasites in the blood cells. The difficulty involved in killing the malaria parasites inside the blood cells is that the blood cells are generally destroyed before the parasites are killed. With these facts in mind, the next step would appear to be to develop a method of killing the parasites without destroying the red blood cells.

This has been accomplished by subjecting the parasites to very low temperatures for long periods of time. Blood will not freeze at zero degrees centigrade, as the dissolved substances of the blood plasma lower the freezing point below that of water. Also, if other substances that do not affect the cells are added to the blood, the freezing point can be lowered still further. In attempting to kill the malaria parasites this method was used. The freezing point of the blood was reduced to about 3.5 degrees below zero centigrade

by adding such substances. Blood containing large numbers of parasites was held at a temperature just above this point for ninety-six hours. The cells were then washed several times by centrifuging in physiological normal saline. The vaccine was then injected into normal birds. A total of eleven birds were vaccinated.

Each bird was tested before vaccination for previous infection by subinoculating a small amount of its blood into another bird. All were found to be free of parasites. The number of injections of the vaccine varied from eight to eleven for each bird. One bird was given eight injections in nine days. The longest period between the first and last injections was nineteen days. In most cases the injections were made every other day. Each dose of the vaccine consisted of one half of the cells of an infected bird. All injections were intravenous. Blood smears were made and examined after each injection of vaccine. Numerous parasitized cells were observed but, in all except two birds, soon disappeared.

Following the last injection of vaccine, a normal bird was inoculated from each of the experimental birds. Only three birds were found to be negative; the others harbored latent infections. Examinations had been made during the period of vaccination and in only two birds were any living parasites found. Very few parasites were seen in these two birds and no increase in number was observed. To test the effectiveness of the vaccination in the three birds in which no parasites could be demonstrated, each bird was inoculated with living parasites four days after the last injection of vaccine. At the same time three untreated birds were inoculated as controls with a comparable dose of parasites. Examinations were made daily as long as any parasites could be found and for several days subsequently.

The infections following the test dose of parasites prove that the vaccinated birds were immune. In one bird no parasites could be found twenty-four hours after the injection. In the other two birds very light infections resulted. In one of these birds the infections had completely disappeared after five days and in the other bird after six days. Compared with the infections of the control

birds, the vaccinated birds had negligible infections. The three control birds developed normal infections.

The vaccinated birds in which latent infections had been demonstrated by subinoculations were inoculated also with test doses of parasites. Only one of these birds showed an increase in number of parasites. The increase was slight, indicating an effective immunity. In the other birds the inoculated parasites disappeared in one to two days. One of the vaccinated birds was given a second test dose three days after the first. Only one parasite was found on the following day, while on the second and subsequent days none could be found.

The infections resulting from the subinoculations from the vaccinated birds demonstrate that the parasites had not been attenuated by the treatment. The infections were as high as, and in some cases higher than, the normal infections. No variation in subsequent infections from these birds was observed.

Two other birds were given a series of injections similar to that received by the vaccinated birds, except that for this experiment uninfected cells were used. Later when tested by inoculating with living parasites, they developed higher than normal infections.

Whether or not factors other than the low temperature were involved in killing the parasites is not known. Subjecting the parasites to zero temperature for eight days did not kill all the parasites. It is entirely possible that the chemicals used to lower the freezing point were instrumental in the process. However, the parasites were not affected by these chemicals at refrigerator temperature. Since it is not possible to maintain the low temperature without freezing the blood, unless the chemicals are used the temperature factor alone could not be evaluated.

The length of time that a bird may remain immune without a latent infection has been a question since it was demonstrated that the latent condition accompanies the immunity. A number of instances have been observed in which the latent condition was lost; that is, the bird was completely cured of the infection. Loss of the latent condition always results in the bird becoming susceptible to reinfection. There has been no method for determining in birds

which have lost the infection naturally the time at which the latent condition was lost. In vaccinated birds the length of time during which the immunity without the latent condition is effective may be measured, but has not been determined because of the large number of birds required to furnish the parasitized blood for the vaccine. Other immunological experiments on vaccinated birds have not been attempted for the same reason. A method by which the parasites could be cultured would facilitate the further development and study of malaria vaccine. With this in view, we have undertaken to study the conditions under which the malaria parasites will reproduce outside the host. When the parasites can be produced in large numbers in test tubes, further studies on immunity by vaccination will be possible.

An Unreprinted *Georgia Scene*

The first of Augustus Baldwin Longstreet's famous sketches of pioneer Georgia life achieved print in the columns of the Milledgeville SOUTHERN RECORDER *of October 30, 1833. Seven more of the series came out in the same newspaper before the author himself commenced editor and made them a feature of his own* STATE RIGHTS' SENTINEL, *published in Augusta from January 9, 1834.* GEORGIA SCENES, *"By a Native Georgian," appeared in book form in 1835, issued from the* STATE RIGHTS' SENTINEL *office. The volume contained nineteen sketches including "The Militia Drill," by another hand. One Scene in the numbered series, however, was not included in the collection. The author probably felt that "Dropping to Sleep" was too slight and purely anecdotal to warrant preservation. John Donald Wade in his life of Longstreet gives a brief synopsis, but it has not been reprinted since it appeared in the issue of the* SENTINEL *for February 26, 1835. It is here copied from the file of the newspaper which in all probability President Longstreet brought with him to Emory College in 1840.*

FOR THE SENTINEL.

No. XVI.

Georgia Scenes, Characters, Incidents, &c.

DROPPING TO SLEEP.

Old Major Loquax, and old 'Squire Somnus, met at an Inn, in the county of ——. They were intimate acquaintances, and either, by mutual request, or because there was but one extra bed-room in the house, they were placed in the same room for the night. The latter was somewhat fatigued from the toils of the day, and consequently, sleep began to steal over his senses soon after he resigned his head to his pillow. He was, however, too sensible of the courtesies due to his old friend, to drop to sleep, while the other was addressing remarks to his ear; and too well bred to solicit a cessation of conversation merely for the sake of his own repose; he therefore resolved to pay due attention to all that was said by his friend. For some time his good breeding kept old Morpheus at a respectable distance; but the silent god at length found his way to the breast-works, under cover of the monotones of the Major's

voice; which, though tardy in its enunciations, was remarkable for its uniformity of time and cadence. It was just as the King of Dreams was getting the advantage of the Squire, that the conversation of the two friends became exceedingly interesting to me, and as it may be so to others, I take the liberty of recording it.

Major. I got wind of which way the fellow went, and—
'Squire. You did!
Major. —and I went right off to the stable—
'Squire. Humph! Good Lord!
Major. —and catch'd my horse—
'Squire. Humph! And catch'd your horse!!!
Major. —and I flung the saddle and bridle on him—
'Squire. The Lord!
Major. —and mounted him—
'Squire. Good Lord o' mighty!!!!
Major. —I rode down to the branch—
'Squire. The Lord! And rode down to the branch!
Major. And stopped to let my horse drink—
'Squire. That—oh yes—In the *branch.*
Major. —and while he was drinking—
'Squire. Well—but—oh, yes, yes—humph!
Major. —and while he was drinking—
'Squire. But stop there—didn't—ah—emphem.
Major. —And while he was drinking—
'Squire. The Lord! And what did he say?
Major. Why I'll swear point-blank you're asleep.
'Squire. Well, s'pose'n I am; what's that to you?

HALL.

An Early Southern Confederacy

By HAYWOOD J. PEARCE, JR.

Haywood J. Pearce, Jr., A.B. '13, A.M. '15, Ph.D. (Chicago) '28, is Professor of History on research leave. He is now engaged in the preparation of a HISTORY OF THE CHATTAHOOCHEE, *of which the following article forms the third chapter. The elaborate documentation of the historian is here dispensed with, but will be available in the book publication.*

WITH peculiar infelicity the English Carolinians applied the name Creeks to the heterogeneous groups of Indians, mostly Muskhogean, scattered along the Georgia streams which came to be called Ogeechee, Oconee, Ocmulgee, Flint, and Chattahoochee. With equal felicity the name might have been applied to almost any group of American Indians. Perhaps the Carolinian traders who seem to have originated the name were thinking unconsciously of the products of the creeks—muskrat and otter and beaver and deer skins—and so came to the scriptural conclusion that by their fruits ye shall know them, vendible fruits, in this case, in any market.

At any rate the scientifically meaningless name stuck, and came to include a multitude of aborigines diverse in origin, in language, and in customs, though tending, when the Europeans came, to constitute a confederacy in war and peace, which often gave trouble to the white man, whether Spanish or English or French, according to the red man's vagaries.

At some time before DeSoto's day (1540-42) most of these Muskhogean tribes to be called the Creeks, had come into the Old Southeast from the West. Nearly all their migration legends point to such a geographical movement. Arrived in the region which came to be Alabama and Georgia, they apparently replaced an earlier stock, the Siouan, who by a peculiar geographical somersault are projected backward into the West, where they play their gory part in American history.

When the Spaniard came—DeSoto, DeLuna, Pardo, Menéndez de Alivés, and the rest—in the mid-sixteenth century, these immigrant Indians of Muskhogean stock were in process of elaborating a confederacy, which in time came to embrace practically all the

Indians south of Carolina, excepting some Cherokees in North Georgia, the Choctaw and Chickasaw of Alabama and Mississippi, and some miscellaneous tribes under the patronage of the Spanish in Florida.

The Spaniard early contributed to the confusion in nomenclature that marks the literature regarding the Creek Indians. After having missionized the Guale Indians of the Georgia Coast, who were apparently Muskhogean, though never embraced in the Creek Confederacy proper, and the Timucuan Indians of the Florida-Georgia borderland, who were not Muskogean, they reached out across the indeterminate zone of Apalache in north Florida and southwest Georgia, to come to grips with a Muskhogean stock allied with the Confederacy, or soon to be become so. These were the Apalachicola near the lower Chattahoochee. All Creeks thereafter to the Spaniards were Apalachicola, and so appear in their documents, a good illustration of rhetorical metonymy, but a source of historical confusion.

We are concerned here only with the Chattahoochee Indians, but some further word of explanation seems necessary to make them intelligible in relation to their neighbors and fellows of the same name.

The dominant stock of Muskhogean invaders in the pre-Spanish days seems to have been the Muscogee, among whom, according to the outstanding authority on the Creeks, John R. Swanton,[1] are to be discovered at least twelve groups, though he mentions the possibility of others lesser. As these tribes and their offshoots settled along the southward-flowing streams of present-day Alabama and Georgia—the Coosa, Tallapoosa, Alabama, Chattahoochee, Flint, Ocmulgee, and Oconee—they conquered, beguiled, or otherwise assimilated many other non-Muscogee groups, whose separate identity became more or less lost, except to ethnologists or anti-

[1]John R. Swanton, *Early History of the Creek Indians and Their Neighbors,* Bulletin 73, Smithsonian Institution, Bureau of American Ethnology (Washington, 1922).

Valuable contemporary sources for the Creeks in the late eighteenth century are: William Bartram, *Travels* (Philadelphia, 1791; London, 1972), and Benjamin Hawkins, "A Sketch of the Creek Country in 1798 and 1799," *Georgia Historical Society Collections,* III (Savannah, 1848), pp. 52-61.

A brief overall survey of the Creeks is found in R. S. Cotterill, *The Old South* (Glendale, California: Arthur H. Clark Co., 1936), pp. 42-45.

quarians. For our purposes the most significant of the Muscogee groups are the Kasihta (Cusseta) and the Caveta (Coweta), who in the Spanish period are discovered upon the mid-course of the Chattahoochee river, near the falls, where Columbus, Georgia, is situated today. In fact, when the Spanish from the south effect contact with these Indians in the late seventeenth century, Coweta is considered "head town" of the Creeks (or Apalachicolas as the Spanish call them). The Spanish then, and the French and English a little later, speak of the Coweta chief as "Emperor," and many of the writers of this period refer to all the tribes of this area as "Cowetas," thereby adding to the confusion in nomenclature.

However, all the towns in this mid-Chattahoochee or falls area, or what we shall call the Columbus area, were distinctly not Cowetas. They were not all even Muscogee. Along both banks of the river, extending from about six miles above the falls, the present site of Columbus, to about thirty miles south of the site, were seated a close succession of Indian towns or villages when the Spanish first came to this part of the Chattahoochee. The towns varied in number and in exact location from year to year. There were sometimes "old towns," *tallahassees,* and sometimes "little towns," diminutive offshoots from larger towns; but old Spanish maps and documents attest to the fact that this thirty-six miles of Chattahoochee river was one of the most thickly settled native and indigenously Indian areas then to be found in colonial America. For one hundred and fifty years, in historic time alone, prior to the Creek removal by treaty in 1827, the Chattahoochee along this sinuous stretch of its waters had reflected all the kaleidoscope of Indian life, its primitive and savage wars, its ceremonial pageantry. Much blood flowed, white man's blood and red man's blood, besides that of Chief William McIntosh, before the Creeks gave up their ancestral river of flowered stones, and went west to strange and unwanted lands.

Before discussing further the mid-Chattahoochee group of towns with which this study is primarily concerned, it may prove helpful to cast a brief glance at the Creeks in broad outline. Ethnologists recognize four main divisions of these Indians: the Muscogee, the

Alabama, the Hitchiti, and the Yuchi. As before stated, the Muscogee were the dominant branch in establishing the Confederacy; and according to migration legend were the latest comers in the Southeast. Their mission was to subdue or assimilate the other divisions. The last to come into the Confederacy and least assimilated were the Yuchi. Known by a variety of earlier names, this warlike group did not come into the Confederacy until late in the colonial period.

The Alabama and Hitchiti spoke Muskhogean dialects, but differing from the pure Muscogee; and the Yuchi a yet different language, contemptuously designated as "stinkard" by the Muscogee.

The Alabama group were found in the historical period, chiefly along the Alabama rivers—the Coosa, Tallapoosa and Alabama, and their tributaries—but short-lived towns of all four groups are discoverable at one time or another on the Chattahoochee and its tributaries. Hitchiti and Muscogee groups, however, predominate on this river. The Yuchi were first encountered by the Spanish and the later Carolinians on the Savannah and upper Ocmulgee rivers; but in the later colonial period Yuchi towns are located on nearly all the Georgia and Alabama rivers whose banks are inhabited by the Creeks.

The English soon divided the Creeks into the Upper and Lower Creeks, a purely geographical designation, unknown to the Spaniards, and possessing no historical significancy until the early national period, when it came to hold a fateful enough significance. The Upper Creeks were those on the Alabama rivers, and their chief tribes were the Coosa, Alabama, and Abikha. The "foundation town" for these groups, and one which in the national period came to possess much of the attributes of a Confederation capital, was Tukabahchee on the lower Tallapoosa river just before it makes the great bend to join the Coosa, and there provide a battle ground for Andrew Jackson, and a theatre for much other dramatic history in the Creek country. The Lower Creeks were the groups dwelling on the Chattahoochee, the Flint, and their tributaries, with which this study is chiefly concerned.

William Bartram, the distinguished botanist from Philadelphia,

whose record of travel through the late colonial South constitutes a treasure-house of contemporary colorful data about Indian towns as well as the country's flora and fauna, contributes to the confusion in Creek nomenclature before referred to. In his usage, the "Lower Creeks" really means the Seminoles, which was a Florida "tribe" then in process of formation from heterogeneous elements, including southward-migrating Creeks; and his use of the term "Creeks" embraces both Upper and Lower divisions.

Before leaving this cursory view of the Creeks, and returning to the Chattahoochee towns, a word might be said about the name Muscogee, which looms so large in Chattahoochee history and terminology. The word is of comparatively late and obscure origin. It is non-Muscogee, and, for that matter, non-Muskhogean. The usual explanation is that it was an Algonquin term applied by the Shawnee, who for a time were neighbors of the Muscogee groups, to comprehend the several branches of that stock for whom no generic name existed. It signifies "swamp" or "wet ground," and doubtless reflects aptly enough many a migrant Shawnee's floundering in the swamps and drowned lands of the Chattahoochee country.

Seated across the Chattahoochee from Coweta, on the left or east bank, about the same distance below the falls as Coweta lay above, was the town Kasihta, Cussetuh, or Cusseta. This was known as the "peace town" of the Lower Creeks, as Coweta was the "war town," and vied with it in importance among all Creeks.

Ironically enough, Cusseta, the "peace town," occupied terrain which today is embraced in the reservation of the greatest Infantry school of arms, Fort Benning. Where the red man once smoked the pipe of peace, and considered his borders inviolate to all refugees from war's alarums, a veritable Field of Mars has been created by the white man. Vergil himself could not have coveted more bucolic sights and sounds than are encountered today where Coweta, the "war town," stood, while the site of Cusseta echoes and re-echoes to the guns of war. Thus do events mock the long-since dead.

According to a migration legend repeated by the Creeks to General Oglethorpe in 1739, the Coweta and the Cusseta came

from the West "as one people," but soon divided, those toward the east becoming known as Kasihta (Cusseta), and those toward the west as Coweta.

From the earliest Spanish times until the day of Creek removal to the West, these towns, Muscogee in origin, preserved precedence among the Lower Creeks. William Bartram visited Cusseta in 1776, and the literary Indian agent, Colonel Benjamin Hawkins, has left minute descriptions of both towns, and contiguous areas, as they existed in 1799.

Extended discussion of the other towns in this mid-Chattahoochee group would unduly exceed space and tax the reader's patience, but in the light of their importance to the Chattahoochee story, it is thought allowable to enumerate those which the maps and documents indicate had the most stable existence in the historic colonial period, that is, from the day of authentic Spanish records to that of Colonel Hawkins' circumstantial descriptions. It is not maintained that all these enumerated towns remained for the entire period in the exact spot assigned, nor that the enumeration is exhaustive. There were short-lived towns, of which no account is taken. Indian villages or "towns" were constantly shifting, as the numerous *tallahassees* or "old fields" in the Creek country attest. Swanton found it necessary to append nine maps or "plates" to his laborious study of the Old Creeks, and no two of these maps are identical, but reveal a constant shifting of village sites, and a variant spelling which is calculated to produce many headaches to the student of Creek geography.

With this caution, therefore, the enumeration of thirteen towns in the mid-Chattahoochee or Columbus area is ventured. Local historians or seekers after particular towns may find the object of their solicitude or search under a variant spelling, or on another site than that sought. This need not indicate error or ignorance; it may testify to the mutability of Indian town sites, which puts at defiance the pen of cartographer and historian.

From north to south on the right or west bank of the river (the Alabama state side), the towns are Tosquique, a non-Muscogee town, apparently a variant of Tuskegee, Caveta (Coweta), Colone,

Usuchi, Apalachicola, Jalipasle, Savacola. On the left or east bank (the Georgia side), from north to south the towns are Kasihta (Cusseta), Ocmulgee, Ocute, Achito, Oconee, Savacola El Grande. The towns Ocmulgee, Ocute, and Achito were often known as the "point towns," from a point made by the river in that locality. The towns enumerated are selected because they appear in maps of the Spanish country as early as 1680 and are also noted by Hawkins in 1799, though sometimes under variant names.

There were other Creek towns on the river, besides these towns in the Columbus area. They were found as far north as the present Georgia counties of Troup and Coweta, before the river has made the abrupt turn to the south where it becomes the present boundary between Georgia and Alabama. From these counties northward, however, the river flowed through a sort of no-man's land—an ancient battle ground for Creeks and Cherokees, whose towns lay in the mountain country to the northward.

Notable among the northernmost towns of the Lower Creeks, in the present county of Heard, was the town of Chattahoochee, said to be the first Muscogee town on the river, but abandoned before Hawkins' time. It is singular that the town bearing the river's name should have played so inconsiderable a part in the river's history.

A few miles south of the town Chattahoochee, and situated between it and the direct southward bend of the river where West Point is situated today, for a long period were a group of towns collectively designated by Swanton as Okfusgee settlements, which he identifies as descendants or offshoots of the Coosa tribe among the Upper Creeks. He indicates five such towns on his appended Plate 2, but in his textual discussion of these settlements he only names three. These settlements were attacked by Georgians on September 7, 1793, and so severely handled that the inhabitants abandoned the sites, and located on the east side of the Tallapoosa river in Alabama, opposite the mother town, "Big Okfusgee." In any case, they do not appear to have played a very conspicuous part in Chattahoochee history. Perhaps they were too exposed to hostile Cherokees to the north, and later to irate Georgians on the north and east.

In the lower course of the river, particularly at its junction with the Flint, after which it is denominated the Apalachicola, are Creek towns. The Apalachicola long had a town in the forks of the Flint and Chattahoochee, and other villages were seated in this area. Halfway between the Chattahoochee-Flint junction and the falls (Columbus area), the Eufaula were long seated, though the maps show them on the opposite bank from the Alabama town that bears their name.

In this connection, it may be pointed out that many of the Chattahoochee towns possessed fields or offshoot towns on the Flint river and its branches, which parallel the Chattahoochee at no great distance. Apparently the townsmen or tribesmen ranged the country between these parallel rivers. Sometimes too, they possessed fields or offshoot towns on both banks of the Chattahoochee. This leads to confusion in place names.

This suggests a note of warning to those who would use present-day place names to identify former Indian sites. The case of Eufaula has been cited. The Georgia town of Cusseta does not mark the location of the Creek "peace town" of that name; nor is the present Georgia county of Coweta very near the former Creek "war town." The name Apalachicola can be very misleading, and the river and town of that name are only very approximate guides to earlier Indian sites. Members of state legislatures and municipal governing bodies did not have the advantage of Swanton's studies, and certainly were not addicted to reading Bartram or Hawkins. Otherwise our modern place names would have been more accurate and more significant.

Before leaving a general discussion of this nature, some mention should be made of the great Creek Trading Path which served as the main artery between the Creeks and the English traders. Along this path, Woodward and his successors brought the dubious gifts of the white man's civilization, and carried away peltries from which accrued English and colonial fortunes. Along this path General Oglethorpe and his entourage bent their way seeking alliance with the red men against the Spaniard.

Starting from Charleston on the sea, the path crossed the

Savannah river into Georgia where Augusta now stands. It proceeded southwestward, crossing the upper Oconee where Milledgeville is now located. Here it divided, one prong running in almost a straight westward line to the Chattahoochee at Coweta, where contacts with Lower Creeks were effected, then northwestward to the Upper Creek towns, and on to the Chickasaw country. The other branch bent southwest to cross the lower Chattahoochee and reach Mobile and the Choctaw country.

Along this wilderness highway, for generations high hopes, tragedy, and bloodshed went hand in hand. Its somber shades long reflected good faith and bad faith, friendship and betrayal between white man and red man.

For a Flyer Missing in Action

[*For Capt. A. Q. Smith, Jr.*]

By ANDERSON M. SCRUGGS

Think not of him as lost. His ship flies on
Beyond the clutching barriers of space;
With youth's eternal laughter in his face,
He rides forever toward eternal dawn.
He is lost only to the mockery
Men make of dreams,—to faith at last grown dull;
Only the young can take the beautiful
Like a rich bloom, into eternity.

His youth relinquished only, as he passed,
The chaos that is ours. He has retrieved
The heart's lost simple things, the things believed
By every child. His ship dissolves at last
Down the long sweep of time's uncluttered coast;
We are the hopeless,—stumbling, ever lost.

The Emerging Revival

By G. Ray Jordan

G. Ray Jordan, A.B. (Trinity College) '17, B.D. '20, A.M. (Yale) '21, D.D. (Duke) '35, is Professor of Preaching in the Candler School of Theology. The author of eleven books and many other publications, he will bring out a new book this fall of which the following article presents the substance of the first chapter.

For the first time in the history of mankind religious leaders, scientists, and militarists are all agreed that civilization is in danger of collapse. Until very recently the scientists have been calm and confident. For the first time in their lives they are scared. Those of us who are not are too ignorant of world conditions to understand contemporary events. The preachers were once accused of frightening people. Now too many of them are theologically liberal, and naive.

Certainly our world faces a most serious crisis. Unless we discover some spiritual resource, some means of character control, we are doomed. Einstein, to be sure, says that only two-thirds of modern civilization may be wiped out. But that is quite enough to involve most of us!

I

Where we place the blame for the present chaos and near collapse of civilization is not the primary matter. Just who is responsible for the disintegration is, at the moment, of secondary importance. When a house is in flames, the firemen don't stop to ask how the blaze started. That is for later investigation. The disturbing fact is, we have not been able to hold society together. We have destroyed much of our finest art, blitzed thousands of our most beautiful buildings, and killed millions of our finest human specimens. An insane paganism has possessed us. Man is still the only animal that organizes to kill his young. If we could only see it objectively, there would be more hope. But we are almost hopelessly a part of the insane confusion.

That would be bad enough, but it is not all. In the midst of this

insane rampage we have witnessed a terrible collapse of morals. No matter how liberal our thinking concerning social problems nor how sophisticated we may think we are, most of us are aware of a moral laxness which is frightening.

There are those who even insist that morale is more important than morals. They have said the young soldier should have his women and liquor. He needs them for his morale. Thus do they try to separate two virtues which always go together. No morale is dependable or permanent unless it has the fiber of Christian morality. Unfortunately, however, these loud talkers are expressing the thoughts of far more than one small group. Rather critically they suggest the low degree to which our morals have fallen in many areas.

But there is much more than low personal standards which disturbs us. There is widespread spiritual anemia. The body of the Church is without sufficient strength. The weakness here is obvious to anyone who faces contemporary facts. The Church has too long centered its attention upon secondary issues. It is needlessly divided into sectarian groups. It is without the mighty drive and sweeping force that gives meaning to the Christian evangel.

All true Christians are pained by the crumbling of home life, the neglect of worship, the abandonment of belief in prayer, the indifference to and disdain of things spiritual. In a sickening way all these depict our desperate need.

II

If, however, a revival is a possibility, for what kind should we pray? The character of this coming event is as vital as the gift of new life itself. Nothing artificial will help us. Our complete spiritual redemption is indispensably necessary.

There was a day in the eighteenth century when superficial brilliance was almost universally honored in England. At the same time, social standards had fallen to such a level that people either laughed at the lack of morals or made no attempt to change regrettable conditions. There were many men like Bolingbroke who recognized the value of decorum and respectability, but who saw no deeper into

the worth of religion. Organized Christianity was considered a necessary "varnish." Like many in our day, the privileged groups of early eighteenth-century England simply could not see that morals had much to do with religion. They did not want to dispense with the Church. Beautiful buildings, lovely rituals, and stately music, they felt, were all worth preserving. Now, as then, however, these have no power to usher in a revival of genuine Christianity.

There are others who think a general spirit of good will is needed. They believe people should feel friendly toward each other. This attitude is certainly worth cultivating, but it does not go deeply enough. Good feeling may be only the result of a healthy physical state. Too many people get the state of their consciences mixed up with the condition of their livers!

The human body is rather quickly satisfied when there is sufficient food and rest. "It is a remarkable fact that," says F. Nansen, the explorer, during his terrific struggle with starvation in the Arctic, "let things be as bad as they may, once in the [sleeping] bag, and with food in prospect, all one's troubles sink into oblivion. The human being becomes a happy animal, which eats as long as it can keep its eyes open, and goes to sleep with the food in its mouth. Oh, blissful state of heedlessness."

There is a parallel experience of superficiality in the state of mind and heart to which many refer when they say we must be "brotherly." A vague feeling of uncritical friendliness toward mankind, however, is a long sea mile from the kind of religion that makes us sincerely and intelligently "love everybody," so that we treat them with the gracious understanding of Jesus.

It is not difficult to be benevolent if nothing particularly annoys us. As C. S. Lewis points out, an individual can easily console himself and even overlook certain vices by saying that "his heart's in the right place," and "he wouldn't hurt a fly." Usually such a person has not made even the slightest sacrifice for another person.

Again, a revival which would momentarily excite us would be of little if any value. There is actual danger that a later reaction would overbalance the initial good it did. If we are going to have a rebirth of religious power, it must spring from something much deeper

than individualism, emotionalism, or the varnish of vain thinking about how kind-hearted we are.

III

There are certain positive values with which we cannot possibly dispense if we are to rebuild our crumbling, chaotic world. Any genuine experience of religion must go down to the roots of life both to discover and create them. It must reach to the very depths of personal experience. It must take in its sweep the complete welfare of humanity, specifically cultivating those characteristics that are of abiding worth in the sight of God.

Certainly mental integrity is one of these. There is no substitute for this *sine qua non* of Christianity. Nothing permanent is possible where people are not willing, with perfect candor and unswerving loyalty, to think through to honest conclusions the problems which concern them. There is an intolerance at the center of Christian tolerance. The devotees of Christ follow truth and love with unswerving devotion.

Those who help usher in the coming revival must have moral discrimination. Man will be considered more important than things, no matter what or where they are, or how beautiful and "inspiring." The welfare of man must rate above all sorts of pleasure-producing experiences.

A revival that merely touches the good feelings of people and does not change our moral standards will be of little use. We need not bother with it. It is not worth our attention. It has no power.

Certainly any revival that has abiding quality must be ethical in the full Christian meaning. If it does not affect the character of all our human relationships, it will have no real significance. Mere brilliance, or mere social prestige, or political power, which are touched only by surface emotionalism, will be of little help. There must be something so radical it will impart the desire and the power to adjust ourselves to all our fellows in the spirit of Christ.

It is generally agreed that Aaron Burr was one of the most brilliant men America has ever produced. His grandfather was Jonathan Edwards, considered by some to have had the keenest mind

Yale has ever claimed. His father was the president of Princeton. Aaron Burr himself graduated from Princeton with the highest marks any student in that college had received up to that time. He was talented and personally attractive. He might, indeed, have held a place in history comparable to that of Washington or Jefferson or John Quincy Adams. Yet, he died as a lonely man and was actually despised by most of his fellow-Americans. He attempted to defeat Washington. He killed Alexander Hamilton in a duel.

Aaron Burr is considered the supreme example of what it means to be a traitor to one's country. In his heart there was no devotion to the highest and holiest. The only power that could have saved Aaron Burr was a radical experience of religion that would have transformed all his social and ethical relationships.

What was true of him is just as true of America—and of all other nations. We must Christianize culture and spiritualize statesmanship. We must cultivate a radical righteousness.

Any religious emphasis worth considering will help us to recover the faith of Christ. As Dr. F. R. Barry says, "To a world which merely wants to be saved from the consequences of its own sin and folly," Christianity can have only one thing to say: "Repent!" Too many people today want a brotherly world in which they can remain unbrotherly, a decent world in which they can live indecently. Too many individuals want economic security without spiritual salvation.

Certainly the coming revival must be Biblical. If it is Christian, it will be Bible-centered. The Bible truth must also be centered in us! Only as our revival message is permeated with the proclamations of the prophets and the teachings of Jesus can it be both constructively practical and redemptively Christian. It will echo the shout of Micah: "He hath shewed thee, O man, what is good; and what doth the Lord require of thee, but to do justly, and to love mercy, and to walk humbly with thy God?" (Micah 6:8.) Its leaders must have the courage of Amos to condemn those who "buy the poor for silver, and the needy for a pair of shoes" (Amos 8:6). All who have a part in it must lift high the teachings of Jesus, hap-

pily agreeing that he offers the only standard for personal and national character. With him everybody was somebody.

The Sermon on the Mount is for today and every day. A revival that has power to build a new world will teach us to pray, "Forgive us our trespasses as we forgive those who trespass against us." "I say not unto thee," declared Jesus, forgive "until seven times: but, until seventy times seven" (Matt. 18:22). Repentance and forgiveness are requisites of any Christian renewal of life. We cannot build a new civilization on the chaotic foundation of hatred, antipathy, and bitterness.

Unfortunately, there are still many people who want to study the Bible sentimentally, objectively, or professionally, without any idea of definitely applying the teachings of Jesus to themselves.

Our moral and spiritual experiences will have abiding significance only when they are vitally related to the Christlike God. When we forsake the deity of the New Testament, we lose strength for life. We may go along for awhile under the impetus of the power which has been generated from some former belief. Even an automobile will run awhile after we cut off the motor. But when it loses its power, it is certain to stop eventually.

The coming revival must be based on reality. That means it will spring from loyalty and love which are fed by a spirit of genuine regard for humanity. It will not primarily concern the forms of ecclesiasticism. It will rather have to do with the inward simplicity and reality of Christianity.

Over against the rich young ruler, who one day approached Jesus, stood a group of intimate friends of the Master. They had little money. That wealthy youth had more than he needed. They had practically none of the goods of life. He had far more than he would ever be able to use. We are fairly sure they had no coat except those which were upon their backs. This rich youth could have outfitted the whole group with a complete wardrobe for each disciple. They had no protection for their feet save the sandals they wore. This young man could have given each of them several pairs of the finest shoes on the Jerusalem market. But while he had never found reality, they possessed it! They were radiant. They had given

themselves to a cause that only the Christ could completely incarnate.

Interestingly enough, however, he was aware that he had missed the best life could give. "What lack I yet?" was the pathetic interrogation that fell from his lips. He must have asked the question with a catch in his voice. His lips were doubtless dry. His hands were damp with perspiration. His tongue probably felt a little swollen as he found it difficult to make the confession. Nevertheless, he knew that he lacked the one great reality and he had come to the one who alone could give it.

Certainly we need culture and scholarship, but scholarship is no good unless it is part of a genuine spiritual experience, and culture is valuable only to the degree that it is Christly. There are no short cuts to salvation. The Via Dolorosa leads through an evil city, out to a cross-crowned hill.

Any great revival will reach to the deepest recesses of the human heart and the farthest places of the world. It will find us where we are and lift us where we belong. Only so can it affect our total life. Any experience less sweeping will fail.

Aware of the failures of the old evangelism, Rauschenbusch declared that its powerlessness "lies in the fact that modern life has gone through immense changes and the church has not kept pace with it." The church lacks the ethical imperative which can induce true repentance. "In private life its standard differs little from respectability. . . . In the State churches the state has dominated; in the free churches the capitalist class dominates. . . . The Church suffers under the general resentment against the class with which it is largely identified." The church will, therefore, have to repent, forgive, and be revived!

There must be enough Divine love in our hearts to reach out and reclaim all those who belong to God.

To the "Parchmented Heirs of Hippocrates"

The versatility of Alexander Means (1801-1883) is an Emory tradition. Physician, administrator, preacher, scientist, teacher, he crowded his long life with multifarious activity. For eighteen years he served as Professor of Natural Sciences at Emory College (1838-1855) and as President for the year 1854-1855. In 1855 he accepted also the position of Professor of Chemistry in the Atlanta Medical College, where he continued until 1869, when he resigned to become State Chemist. Dr. Means's early electrical demonstrations are well-known, but it is seldom remembered that he was a prolific writer of occasional verse. In 1878 he published a volume entitled A Cluster of Poems, for the Home and the Heart, Gathered by the Author at Leisure Hours (*New York, E. J. Hale & Son*), *from which the following selection is reprinted. The book was dedicated to Bishop George F. Pierce, and President Atticus G. Haygood of Emory College furnished an appreciative introduction, in which he wrote:*

This volume has been demanded of its author by a host of friends, and most earnestly by his old students. There are thousands, in his own section, many in the Northern and Western States of our great Union, and some across the water, who will be glad to see and to enjoy this "Cluster of Poems for the Home and the Heart." And they may welcome it without fear; for there is not one poisonous flower in the cluster. There is not a line in this book that will bring a shadow to any home, a blush to any cheek, a snare to any heart.

Atlanta Crushed and Crowned.

A POEM

ADDRESSED TO THE GRADUATING CLASS OF THE ATLANTA MEDICAL COLLEGE, AND TO A LARGE AND ATTENTIVE AUDIENCE OF CITIZENS, ASSEMBLED IN THE CITY HALL, AUGUST 31ST, 1866.

[This young and flourishing city, which then contained about 18,000 inhabitants, was burnt, ravaged, and razed to its foundations, in the month of September, 1864, by the Federal forces under the command of Gen. Sherman, during the four years' merciless internecine war between the North and the South. But no sooner had peace been declared, than her returning thousands who had fled from their blazing homes, commenced to rebuild the ruined city and repair their wasted fortunes. Such an outlay of human energy has perhaps never been witnessed upon either continent, in the same length of time, and with no larger resources at command.]

On this bright gala-day busy memory sweeps,
  Upon broad, dusky wing, the exuberant past;
Numbers twenty-three months, and looks down on the heaps
  Of a war-ravag'd city, just breathing her last.

O God! what a vision glares red on the eye,
  As earth-rocking thunders roll death through the streets,
And millions of capital melt in the sky,
  As flames lash her buildings in wild, livid sheets!

Pandemonium shouts through her sulphurous hall
  Till the revel infernal re-echoes through hell,
And the great master spirit responds to the call
  That invokes his black curse over mountain and dell.

But enough!—there's a chapter of carnage and blood
  That shall glow in red letters on history's page,
And shall rival the records of fire and of flood
  That have scandal'd a Nero's and Attila's age.

* * * * * *

The demon of war had scarce quitted his prey,
  And a conquering army its plunder and lust;
Its cataract roar had but just died away
  Over bomb-shattered buildings, now crumbled to dust,

When thousands who fled from their blazing abodes,
  To seek among strangers a covert from war,
Look'd longingly back o'er the blood-clotted roads,
  And their courage replum'd, under Hope's guiding star.

From the north, south, and east, the worn refugees come,
  And the west pours her quota in dust-cover'd throngs;
Each weeps o'er the wreck of his once happy home,
  And appeals to high Heav'n to avenge all his wrongs.

Full-soul'd and harmonious, they rush to new toils,
  And tax earth and air, sea and sky, for supplies;
And though myrmidon legions had gorg'd on her spoils,
  They swear by their manhood *"Atlanta shall rise!"*

'Twas a struggle of giants that knew no recoil!
  From morning till midnight resounded their blows;
The ingath'ring thousands no dangers could foil,
  Till the white flag of triumph in glory arose.

Old Balbec and Luxor for ages have slept,
  Redeemless and time-worn and shrouded in gloom;
O'er their huge broken columns the serpent has crept,
  And the yells of the jackal have sounded their doom.

But the deathless Gate City, though crush'd by the tread
  Of militant millions and thundering trains,
Has rent her own winding-sheet, burst from the dead,
  And the new pulse of life gushes warm through her veins!

Hail! hail! ye proud piles of undying renown!
  Your numbers shall swell as the ages roll on;
And your sun-lighted summits in grandeur look down
  On the contrite admirers your fame shall have won.

Fair Queen of the Midlands! thy reign shall extend
  From mountain to seaboard where commerce is found;
And Religion and Science in harmony blend,
  To foster the virtues their bulwarks surround.

Thus, lighting the landscape and blessing the land,
  The next generation thy name shall inspire,
To shout on the soil where thy monuments stand,
  "The souls of our fathers were proof against fire!"

Ye parchmented heirs of Hippocrates, rouse!
  Your knowledge must quacks and imposters confound;
Your fond "Alma Mater" has laurel'd your brows,
  And Atlanta shall honor the sons she has crown'd.

She has own'd your profession, its temple repair'd,
  Dismantled and torn by the storm that has pass'd;
Then build up her fame with a labor unspar'd,
  That her gloom may be turn'd into glory at last.

EDITORIAL

The United States was the first modern nation to found its government on a written constitution. It is hard to realize what an act of courage it was to seek to embrace in a formula the whole principle of rule which should bind a people as yet ununified, and to attempt to anticipate the exigencies of a darkly uncertain future.

Perhaps there has been too much emphasis on the debates of the Constitutional Convention of 1787, and on the method of compromise by which the document was finally drafted in terms not wholly unacceptable to the majority of the delegates assembled in Philadelphia during a long sweltering summer. Certainly some aspects of the principle of judicial review, and its practical applications in some eras of the history of the Supreme Court have cast doubt upon the enduring validity of the work of the founding fathers. The fates of idealistic amendments, one of which proved insupportable by the people, have worked further to undermine confidence in what was intended to be the charter of American liberties.

Yet, whatever abuses have been committed in its name, and whatever failures to follow its guidance have occurred in our national history, the Constitution of the United States is probably the noblest of social documents.

In this time of unrest, doubt, and dismay, we need to go back to the Constitution, to seek there the basic principles on which our nation was founded, and to strive to apply those principles, in no merely legalistic fashion, to the problems which bedevil the fifth generation of American nationhood.

Let us read the Preamble once again:

> We, the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquillity, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution of the United States of America.

It would be a dull and earthy spirit that these ringing clauses failed to rouse and thrill. But if the response of the American reader is merely an emotional one, the failure of his perception is deplorable and of ill omen to the state. For in this sounding Augustan rhetoric is embodied a concept of human government in which the clearest experience and the loftiest thought of the ages are united.

It may seem an act of violence to separate any phrase from the close-knit context, but at this moment of confusion these words leap forth from the sentence: "to promote the general welfare."

There were conflicting interests among the delegates to the Constitutional Convention, and honest differences of opinion as to the ends and means of government stubbornly maintained. These men were not above the normal human stature; though too much probably has been made of the private and sectional interests which they represented, they were not altogether removed from natural selfishness and prejudice. Nevertheless, all the evidence points conclusively to the fact that they were capable of sinking their differences in seeking sincerely and strenuously the means that would promote the general welfare, rather than the special welfare of a class or of a section. In this great end we find a complete accord between Federalist and Anti-Federalist, between the delegate from New Jersey and the delegate from Virginia.

Pressure politics was not unknown to the founding fathers; the lobbyist for special privilege was familiar enough to them. Our early history is not an absolutely untarnished record of disinterested public service. And yet an ideal possessed the minds of those who were chosen to write the basic document of the new nation—"to promote the general welfare"—and since the ideal dominated above all other selfish considerations, present too, the work done was good.

It has not been the mere existence of the Constitution that has carried the United States to the heights of national greatness. The most carefully drawn legal document is liable, and even peculiarly liable, to misinterpretation and evasion. The Constitution of the United States has not always succeeded in resisting pressures both direct and oblique. That the spirit of the Constitution has nonethe-

less prevailed has been due to the fact that the ideal which possessed those who framed it has never been quite submerged even in times of public apathy and of public turmoil.

We need not fear the breakdown of the Constitution, but we must be jealously on guard against the failure of the ideal which the Constitution embodies. When zeal for the general welfare appears to be disintegrating under the constant and diverse pressures of special groups and interests, when officials whose authority stems directly or indirectly from the Constitution appear to be on the point of surrendering to the forces of greed and oppression—then there is cause for fear. If the sense of the general welfare is lost to our leaders, so that they capitulate to the seekers after private gain and factional power, all is lost.

T. H. E.

Christ the Lord

A Review by D. T. ROWLINGSON

John Knox, A.B. (Randolph-Macon) '19, B.D. '25, Ph.D. (Chicago) '35, is Baldwin Professor of Sacred Literature and Director of Studies at Union Theological Seminary, New York. His latest book comprises lectures delivered at the Colgate-Rochester Divinity School in 1944 on the Ayer Foundation.

In *Christ the Lord*[1] John Knox amplifies his earlier book entitled *The Man Christ Jesus* by discussing further the meaning of Jesus for the earliest Christians. The subject is presented in terms of three categories: the memories which the first disciples had of Jesus' earthly career, the continued impact of his personality upon them after his death, and the interpretations of his significance which they were led to make—all of them considered as but different aspects of one unified meaning. Within this framework the author treats several important phases of current historical interest in Jesus, including the value of the historical method itself, Jesus' self-consciousness, his teaching about the Kingdom of God and ethical living, the meaning of the resurrection for our conceptions of revelation, and early speculation about the Person of Christ.

The values of this book, for those unacquainted with technical New Testament study as well as for the professional, are many. John Knox has remarkable ability to compress the treatment of weighty and complex problems into a brief outline of transparent clarity, avoiding excessive technical details, without sacrificing profundity of understanding and the display of ingenuity. He indicates an adequate perspective in regard to the crucial issue of the relationship between the historical method and religious presuppositions in Gospel study. Unqualified allegiance to proved historical methods must include some sympathy with Christian assumptions, if intelligent historical reconstruction is to yield conclusions worthy of consideration.

The author is adept at stating a discriminating insight in a striking sentence. For instance, after discussing the baffling question of Jesus' self-consciousness and arriving at a conclusion which satisfies him, he reminds us of a fact more important than a satisfactory theory. "Jesus' significance," he says, "does not at all depend upon the way he thought of himself. God did what he did in and through Jesus quite regardless of the terms in which Jesus conceived of his nature or task" (p. 43). Regarding Jesus' impact upon the early Christians, he says, "They remembered *him* more vividly and more truly than any fact about him or anything he said" (p. 56). He penetrates to the real meaning of revelation when he writes: "The revelation of God in Christ is not the imparting of a new idea of God; it is a fresh unveiling of the Reality to which ideas, new and old, with greater or less adequacy, apply" (p. 71). There are many others similar in their forcefulness which help to make the book extremely stimulating.

Some aspects of the author's reconstruction are questionable, especially when the impression is given that he is inclined to force the data too rigidly into a preconceived framework congenial to him. His brilliant and fertile imagination at times leads to unconvincing extremes, as when he is arguing that the

[1] *Christ the Lord: The Meaning of Jesus in the Early Church.* By John Knox. Chicago: Willett, Clark & Company, 1945. xi, 146 pp. $1.75.

preexistence of Jesus is a doctrine of the Gospel writers. These are perhaps minor faults in a book which contains so much of value, and which is never dull. Overshadowing everything else is the author's profound appreciation of the transcendent greatness of Jesus, combined with acuteness of intellect which prevents sentimentality in religious fervor. He is sensitive to a fact, all too often ignored by the historian, expressed in the words of a kindred spirit: "The great teachers of mankind have won the right to our deference. . . . Their size should save them from impertinence." Thus he avoids the extremes of skepticism and of unintelligent piety which characterize much writing in this field, setting forth a positive and appealing portrait of the world's mightiest personality.

Against the Furious Men

A Review by WARD PAFFORD

This volume, the author's second book of verse, presents a selected group of poems written during the years 1938-45.[1] There are altogether fifty-four pieces arranged, generally in the order of their composition, under three heads: "Refuse the Night," "Out of a Golden Sleep," and "Now in a Colder Dream." The material of the first section is based for the most part upon impressions received during Mr. Warren's sojourn in England in attendance at Cambridge University; that of the second deals with the coming of war; and that of the third springs immediately from the poet's experience as a soldier during the war.

The title of the book suggests the author's stand as poet and as free man against the furious men who falsely dreamed of a New Order that now is ashes. Though not all of the poems are directly concerned with war, there are few that are not heavily marked by the years of their composition.

Mr. Warren has no sermon to preach about war, its glory or its evil. It was to him a gigantic fact, the terrible magic of which caused wonder and shock in the individual so immediately bewildering that no clear interpretation of its full meaning and implications was possible:

> I walk alone again, and the crimson planet
> Of war comes down on a world too weary to care,
> A world of people who walk alone in their darkness
> But know his galloping and his gold-red hair.

The poet catches for us, subtly and delicately, something of the whole confused mood of the conflict, standing in sharp contrast to the precious peace that was shattered. But the promise of the victory, lovely as it is to contemplate and hopeful as the heart may be, is still a word:

[1] *Against the Furious Men.* By James E. Warren, Jr. Emory University, Banner Press, 1946. 71 pp. $1.50.

But now I stand in that long cold that hushes
All whispered pain. Now I am reassured,
Waiting to welcome from the sturdy ashes
Love's bright and rising bird.

All genuine poetry of a serious order will inevitably, if properly read and understood, warm the memory, transfigure the glaring detail of actuality, and clutch irresistibly at the heart. If Mr. Warren achieved these things consistently, he would be a great poet; he does one or the other frequently enough to stamp his verse as good and as real. His facility as an image-maker is perhaps the most notable of his gifts: "the faint buoy bells that came as low as broken madrigals"; "cities ringing with bells and bees" or "going down with granite thunder." Moreover, he is likely to be more regularly successful than he already is in the exercise of his craft if he will persist in his diligent admiration of the great poets of the past and will continue in the difficult search for his own distinctive idiom.

Mr. Warren's is an interesting mind intensely serious in its evaluation of human experience, and his voice is a very eloquent one.

Prince Henry and English Literature[1]

Elkin Calhoun Wilson, B.Ph. '22, A.M. (Harvard) '27, Ph.D. (Harvard) '34, is Assistant Professor of English at Cornell University. His ENGLAND'S ELIZA *was published by the Harvard University Press in 1939.*

Prince Henry Frederick, son of James VI of Scotland, was born at Stirling Castle in February 1594. Elizabeth of England was his godmother. After his father succeeded to the throne of England, in his sixteenth year he was invested as Prince of Wales. Two years later, on November 6, 1612, he died of typhoid fever in St. James's Palace. During his brief and uneventful life Prince Henry was the object of an admiration and laudation almost unparalleled. Such giants of the age as Ben Jonson, Sir Walter Ralegh, and George Chapman took immense pride in their affectionate intimacy with him. Leaders of the reformed church saw in him the hope of European Protestantism. Ambassadors from the Continent paid attentive court to him. The common people rejoiced in his manly and martial temper. As the extravagance and licentiousness of the royal court alienated his subjects from James, Henry's sobriety and natural dignity caused him to become the cynosure of all hopes.

In his lifetime dozens of books were dedicated to this prince who was not unambitious to play the rôle of patron of the arts and sciences. The intellectual and cultural leadership of the realm freely tendered him was destined to be unrealized. At his untimely death there was an outpouring of commemorative tributes perhaps only equalled by those which elegized his royal godmother.

The poets of the English nation united almost with one voice to honor Prince Henry. Of well-known names Shakespeare's is one of the few missing in this chorus of mourning panegyric. It is a pity that so little poetry is found in this spontaneous and swelling stream of verse. Professor Wilson has pre-

[1] *Prince Henry and English Literature.* By Elkin Calhoun Wilson. Ithaca, New York: Cornell University Press, 1946. xiii, 187 pp. $3.00.

sented a more than generous sampling, but the stylized and pedantic conceits fall coldly on the reader's ear. The right Elizabethan strain is perhaps only to be heard in a ballad snatch dropped into a footnote:

Lo, where he shineth yonder,
  A fixed star in Heaven,
Whose brightness here came under
  None of the planets seven!
For if the sun should tender
  Love to the moon, and marry,
They both could not engender
  So bright a star as Harry.

It may be, however, that the effort was not altogether wasted. A fashion was set in the early seventeenth century of the publication of memorial verse. John Milton in his boyhood must have heard expressed on many occasions the regrets of the Puritans for the loss of their putative leader. He must have read many of the elegies evoked by the death of Prince Henry.

> At Cambridge in 1625 Milton met a tradition that called for poems from university men on university or national events of importance. . . . When Edward King, born in the year in which Henry died, was, like Henry in 1612, "dead ere his prime" in 1637, Cambridge men set about a memorial volume, *Justa Edouardo King naufrago*. As Milton worked at *Lycidas* his capacious memory surely embraced many verses from the "various quills" that had sounded at Cambridge and everywhere else for lost Meliades. He would hardly have composed forgetful of the fullest elegiac chorus of his lifetime.

Emory University Museum Bulletins

A Review by HOWARD M. PHILLIPS

Howard M. Phillips, B.S. (Wake Forest) '32, M.A. (Wake Forest) '34, Ph.D. (Virginia) '38, is Professor of Biology.

Four entomological bulletins[1] recently published by P. W. Fattig, Curator of the Emory University Museum, contain observations and data representing the product of intensive study and extensive field work covering a period of approximately twenty years.

The general life histories, economic importance, predators, parasites, and prey are briefly described for the velvet ants, May beetles, robber flies, horseflies and deerflies of Georgia. Generic and taxonomic lists, arranged with dates of collection, compare species from various localities in Georgia. The collectors and the museums or universities to which specimens have been sent are recorded with appropriate symbols.

Fifty-one species, subspecies, and varieties, involving 1,123 specimens of

1) *The Mutillidae or Velvet Ants of Georgia,* 1943, 24 pp.; 2) *The Phyllophaga or May Beetles of Georgia,* 1944, 32 pp.; 3) *The Asilidae or Robber Flies of Georgia,* 1945, 33 pp.; 4) *The Tabanidae or Horseflies and Deerflies of Georgia,* 1946, 26 pp.

velvet ants, have been collected by the author, all species having been repor
previously from Georgia. Seven additional species and subspecies of velvet a
recorded in other literature are included in the lists. Eleven new hosts
velvet ants have been listed by the author. 129 species of robber flies, of wh
the prey of forty-seven are represented by 112 species, have been reported.
collection of 17,967 specimens represents the seventy species of May bee
that may be found listed in the second bulletin. 118 species of horseflies a
deerflies have been collected.

The publications will be of particular interest and value to departments
entomology, museums, and agricultural experiment stations, not only in Ge
gia, but throughout the nation. The general descriptions and geographi
distributions of the insects will be of interest to biologists. The taxonom
lists will be of inestimable value to field entomologists and collectors.

Valuable and interesting as these bulletins may be to entomologists, pro
sional and otherwise, a few technical objections may be raised. An omiss
that may handicap entomologists interested in reference to original literat
is the occasional failure to cite exact sources. Though a bibliography is
cluded in each bulletin, specific references are often lacking. Certainly M
Fattig's work as revealed in these bulletins deserves recognition by definite a
adequate provision for the proper deposition of specimens in the Emory U
versity Museum, especially since most of the specimens collected by the aut
have been sent to other institutions for preservation.

EMORY UNIVERSITY

ATLANTA

High-school students who plan to enter Emory University will be interested in the general principles governing admissions.

1. The high-school program should be the beginning of the student's general education, which college attempts to complete. It should be planned in the light of this fact. Emory leaves this planning to high-school officials and does not lay down any prescribed lists of units or subjects to be taken in high school.

2. Emory is much more interested in how well a student does his work in high school than in the particular nature of his program of courses.

3. The mastery of the essential tools of learning and the inculcation of the attitudes and habits which mark the scholar should be stressed in high school.

4. Chief among these attitudes and habits are an eagerness to learn, a high regard for accuracy and correctness, the ability to keep attention fixed on the task in hand, a willingness to devote long hours of sustained effort to intellectual work, and a pride of achievement that is satisfied with nothing short of excellence.

A statement prepared by
the Director of Admissions of the College